

SEQUENCE LISTING

<110> Rouleau, Guy A.
Lafreniere, Ronald G.
Rochefort, Daniel

<120> LOCI FOR IDIOPATHIC GENERALIZED EPILEPSY, MUTATIONS THEREOF AND METHOD
USING SAME TO ASSESS, DIAGNOSE, PROGNOSIS OR TREAT EPILEPSY

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<140> UNKNOWN

<141> 2003-09-17

<140> 09/718,355

<141> 2000-11-24

<150> 60/167,623

<151> 1999-11-26

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<170> PatentIn version 3.1

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Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
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Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
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Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Gly
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Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
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Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser
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Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg
165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp
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Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
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Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
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Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu
275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu
290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp
305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys
325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val
340 345 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe
355 360 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp
370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met
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Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn
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Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala
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Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser
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485 490 495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
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Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg
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Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser
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Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp
580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln
610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys
625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu
675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu
690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu
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Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro
755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe

770

775

780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu
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Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe
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Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp
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Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly
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Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu
 850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile
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Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
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Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln
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Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val
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Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met
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Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
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Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu
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Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
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1070						1075					1080			
Ser	Gly	Ile	Gly	Thr	Gly	Ser	Ser	Val	Glu	Lys	Tyr	Ile	Ile	Asp
1085						1090					1095			
Glu	Ser	Asp	Tyr	Met	Ser	Phe	Ile	Asn	Asn	Pro	Ser	Leu	Thr	Val
1100						1105					1110			
Thr	Val	Pro	Ile	Ala	Val	Gly	Glu	Ser	Asp	Phe	Glu	Asn	Leu	Asn
1115						1120					1125			
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Lys	Leu	Asn	Glu	Ser	Ser	Ser	Ser	Ser	Glu	Gly	Ser	Thr	Val	Asp
1145						1150					1155			
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Trp Phe	Glu Thr Phe Ile Val	Phe Met Ile Leu Leu	Ser Ser Gly
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Lys Thr	Met Leu Glu Tyr Ala	Asp Lys Val Phe Thr	Tyr Ile Phe
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Tyr Phe	Thr Asn Ala Trp Cys	Trp Leu Asp Phe Leu	Ile Val Asp
1280	1285	1290	
Val Ser	Leu Val Ser Leu Thr	Ala Asn Ala Leu Gly	Tyr Ser Glu
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Leu Gly	Ala Ile Lys Ser Leu	Arg Thr Leu Arg Ala	Leu Arg Pro
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Leu Arg	Ala Leu Ser Arg Phe	Glu Gly Met Arg Val	Val Val Asn
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Ala Leu	Leu Gly Ala Ile Pro	Ser Ile Met Asn Val	Leu Leu Val
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Cys Leu	Ile Phe Trp Leu Ile	Phe Ser Ile Met Gly	Val Asn Leu
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Phe Ala	Gly Lys Phe Tyr His	Cys Ile Asn Thr Thr	Thr Gly Asp
1370	1375	1380	
Arg Phe	Asp Ile Glu Asp Val	Asn Asn His Thr Asp	Cys Leu Lys
1385	1390	1395	
Leu Ile	Glu Arg Asn Glu Thr	Ala Arg Trp Lys Asn	Val Lys Val
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Asn Phe	Asp Asn Val Gly Phe	Gly Tyr Leu Ser Leu	Leu Gln Val
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Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp
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Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Glu Ser Leu Tyr
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Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe
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Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
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Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu
1490 1495 1500

Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys
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Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met
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Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu
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1595 1600 1605

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Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile
1625 1630 1635

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Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys Arg Glu		
1685	1690	1695
Val Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser		
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Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly		
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Leu Leu Ala Pro Ile Leu Asn Ser Lys Pro Pro Asp Cys Asp Pro		
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Asn Lys Val Asn Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn		
1745	1750	1755
Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser		
1760	1765	1770
Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu Glu Asn		
1775	1780	1785
Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp		
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Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp		
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Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala		
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Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln		
1835	1840	1845
Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His		
1850	1855	1860

Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu
1865 1870 1875

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe
1880 1885 1890

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr
1895 1900 1905

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln
1910 1915 1920

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala
1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu
1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser
1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro
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Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
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Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Gly
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Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
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Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser
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Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
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Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
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Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
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Leu Asp Phe Thr Val Ile Thr Phe Ala Phe Val Thr Glu Phe Val Asn
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Leu Gly Asn Phe Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
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Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
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Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn

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 Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys
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 Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe
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 Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
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 Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala
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 Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser
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 Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
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Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser
515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr
530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg
545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser
565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp
580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln
610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys
625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu
675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu
690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu
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Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro
755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe
770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu
785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe
805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp
820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly
835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu
850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile
865 870 875 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
885 890 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe
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Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln
915 920 925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val
930 935 940

Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met
945 950 955 960

Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
965 970 975

Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu
980 985 990

Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
995 1000 1005

Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val
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Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp
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Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Ala Glu
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Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr
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Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp
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Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val
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Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn
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Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu
1130 1135 1140

Lys Leu Asn Glu Ser Ser Ser Ser Ser Glu Gly Ser Thr Val Asp
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Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu

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Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly 1220 1225 1230		
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Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe 1250 1255 1260		
Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr 1265 1270 1275		
Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp 1280 1285 1290		
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Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Val Asn 1325 1330 1335		
Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val 1340 1345 1350		
Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu 1355 1360 1365		
Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp 1370 1375 1380		

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1400						1405					1410			
Asn	Phe	Asp	Asn	Val	Gly	Phe	Gly	Tyr	Leu	Ser	Leu	Leu	Gln	Val
1415						1420					1425			
Ala	Thr	Phe	Lys	Gly	Trp	Met	Asp	Ile	Met	Tyr	Ala	Ala	Val	Asp
1430						1435					1440			
Ser	Arg	Asn	Val	Glu	Leu	Gln	Pro	Lys	Tyr	Glu	Glu	Ser	Leu	Tyr
1445						1450					1455			
Met	Tyr	Leu	Tyr	Phe	Val	Ile	Phe	Ile	Ile	Phe	Gly	Ser	Phe	Phe
1460						1465					1470			
Thr	Leu	Asn	Leu	Phe	Ile	Gly	Val	Ile	Ile	Asp	Asn	Phe	Asn	Gln
1475						1480					1485			
Gln	Lys	Lys	Lys	Phe	Gly	Gly	Gln	Asp	Ile	Phe	Met	Thr	Glu	Glu
1490						1495					1500			
Gln	Lys	Lys	Tyr	Tyr	Asn	Ala	Met	Lys	Lys	Leu	Gly	Ser	Lys	Lys
1505						1510					1515			
Pro	Gln	Lys	Pro	Ile	Pro	Arg	Pro	Gly	Asn	Lys	Phe	Gln	Gly	Met
1520						1525					1530			
Val	Phe	Asp	Phe	Val	Thr	Arg	Gln	Val	Phe	Asp	Ile	Ser	Ile	Met
1535						1540					1545			
Ile	Leu	Ile	Cys	Leu	Asn	Met	Val	Thr	Met	Met	Val	Glu	Thr	Asp
1550						1555					1560			
Asp	Gln	Ser	Glu	Tyr	Val	Thr	Thr	Ile	Leu	Ser	Arg	Ile	Asn	Leu
1565						1570					1575			
Val	Phe	Ile	Val	Leu	Phe	Thr	Gly	Glu	Cys	Val	Leu	Lys	Leu	Ile
1580						1585					1590			

Ser Leu Arg His Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp
1595 1600 1605

Phe Val Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu
1610 1615 1620

Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile
1625 1630 1635

Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala
1640 1645 1650

Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro
1655 1660 1665

Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val Met Phe Ile
1670 1675 1680

Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys Arg Glu
1685 1690 1695

Val Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser
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Leu Leu Ala Pro Ile Leu Asn Ser Lys Pro Pro Asp Cys Asp Pro
1730 1735 1740

Asn Lys Val Asn Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn
1745 1750 1755

Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser
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Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu Glu Asn
1775 1780 1785

Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp
1790 1795 1800

Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp
1805 1810 1815

Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala
1820 1825 1830

Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln
1835 1840 1845

Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His
1850 1855 1860

Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu
1865 1870 1875

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe
1880 1885 1890

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr
1895 1900 1905

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln
1910 1915 1920

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala
1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu
1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser
1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro
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Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys
2000 2005

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cctccagaga tgggtgcaga gccctggag gacctggacc cctactatat caataagaaa 360
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<212> DNA
<213> Homo sapiens

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agtattgaat aaaggggaagg ccatcttccg gttcagtgcc acctctgccc tgtacatttt 240
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gattytgaaa ctgtgtctta atgtagtctt aaaataaaac tgaagagcat tttattaaag 420
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<212> DNA

<213> Homo sapiens

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aaaatccatc tgcttagttt tcttttttag tatttatcta ttccactgat ggagtgataa   180
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cagatacacc ttcacaggaa tatatacttt tgaatcactt ataaaaatta ttgcaagggg   300
attctgttta gaagatttta ctttccttcg ggatccatgg aactggctcg atttcactgt   360
cattacattt gcgtaagtgc ctttbytga aacttaagag agaacatagt ttggttttcc   420
atcagtgctt atgcttttaa gaatagggtt gctttacctg tagaatattt ttgtgtgatt   480
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<211> 253

<212> DNA

<213> Homo sapiens

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agtcttgaga gctttgaaaa ctatttcggg aattccagggt aagaagtgat tagagtaaag   180
gataggctct ttgtacctac agctttttct ttgtgtcctg tttttgtgtt tgtgtgtgaa   240
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<211> 340

<212> DNA

<213> Homo sapiens

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attccagggt agagcaagggt tagataatga gacggaccca tcatgtgatt cagcatcctt   240
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<211> 266
<212> DNA
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tcaa	604

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cataataaat gttaccatgg agcaaactaa attatctcca aaagccttca ttaggtagaa	180
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<210> 19
<211> 818
<212> DNA
<213> Homo sapiens

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ttgttgacc tggccatcac catctgtatt gtcttaata ctcttttcat ggccatggag 480
cactatccaa tgacggacca tttcaataat gtgcttacag taggaaactt ggtaagcata 540
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tgtgtatagc agtctttcaa ccatccttca tgcttcttgg cccctgcaaa atcgcaatta 660
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 <211> 645
 <212> DNA
 <213> Homo sapiens

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aactacaaat tgccatacaa atttaagtta gtaatagaat cattgtggga aaatagcata	180
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 <211> 829
 <212> DNA
 <213> Homo sapiens

<400> 21	
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aacgttaaata atgctaataa agatcatcgg caattccgtg ggggctctgg gaaatttaac	180
cctcgtcttg gccatcatcg tcttcatttt tgccgtggtc ggcatgcagc tctttggtaa	240
aagctacaaa gatttgttct gcaagatcgc cagtgttgt caactccac gctggcacat	300
gaatgaactt tccactcck hctgtattgt gtccgcgtg ctgtgtggg agtggataga	360
gaccatgtgg gactgtatgg aggttctg tcaagccatg tgccttactg tcttcatgat	420
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aaaaacaaac tatgattatt ggttttaaag tccattacct tggatatatt atcactttaa	660
caacacagca atatabcagt gcccctgcat tttttatacc aaattctatt ttgtcagtca	720
ctttatcaca ttttttatgt gaattacaat agagtatcat attgagatga gcctaaaagg	780
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<210> 22
 <211> 909
 <212> DNA
 <213> Homo sapiens

<400> 22	
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agaaatcatg tctttgtcca aggatgtgct attgagccag tcacaaattc agatcaccca	180
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 <211> 516
 <212> DNA
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 <223> n = a, c, t or g

<220>
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 <222> (415)..(451)
 <223> N = a, c, t or g

<220>
 <221> misc_feature
 <222> (454)..(454)
 <223> N = a, c, t or g

<220>
 <221> misc_feature
 <222> (513)..(513)
 <223> n = a, c, t or g

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 gagtgcagct tatttagctg ttggtcagct aanataaatc acatataata aaatngcact 420
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<210> 24
 <211> 640
 <212> DNA
 <213> Homo sapiens

<400> 24
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 actctaggct tagagagcta tgctagcaag acagagatga gcatagtaat aaaaagacaa 120
 gacaaggaca ttgctaaagg atattatgga agcagagaca ctttatctac ttttatttca 180
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taagaagcta atcattaatt tttgcttact attaaatagc ccagaaagtg tagcccttca	600
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<210> 25
 <211> 607
 <212> DNA
 <213> Homo sapiens

<400> 25	
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ttgcgaggaa aaaaaaaaaag taacagtaac tactgtttct ctgccctcct attccaatga	180
aatgtcatat gcatatgatt aatTTTTtaa atagcttatg gagtataatt atttttgaaa	240
gctaataatg tgtaacattt tctttatagg catttgaaga tatatatatt gaycagcgaa	300
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ggctggactt cttaattgtt gatgtaggta tcgttcatat ttttgtctct gttcaaggta	480
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<210> 26
 <211> 336
 <212> DNA
 <213> Homo sapiens

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ttactcagaa cttggagcct atcaatctct caggacacta agagctctga gacctctaag	180
agccttatct cgatttgaag ggatgagggg aagaaaaatg aaagaacctg aagtattgta	240

tatagccaaa attaaactaa attaaattta gaaaaaagga aaaatgtatg catgcaaaaag	300
gaatggcaaa ttcttgcaaa atgctcttta ttgttt	336

<210> 27
 <211> 677
 <212> DNA
 <213> Homo sapiens

<400> 27	
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aaagaatgga aagaccagag attactaggg gaattttttt tctttattaa cagataagaa	180
ttctgacttt tctttttttt cattttgtga ttaggtgggt gtgaatgccc ttttaggagc	240
aattccatcc atcatgaatg tgcttctggg ttgtcttata ttctggctaa ttttcagcat	300
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caggtttgac atcgaagacg tgaataatca tactgattgc ctaaaactaa tagaaagaaa	420
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aataacaaaa taatgacata catctattat ttagttccta agaaaaagta tatatttctt	600
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<210> 28
 <211> 457
 <212> DNA
 <213> Homo sapiens

<400> 28	
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attatatcag taagaatatt tattaacat cagggtctaaa ttatttttac tccaaagtaa	180
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aaaatatttg ggaaaaagtg tgacaggtaa atattcaagc atagcaatgt ttatcagaaa	420

gatcttacta agataattca acacatgaat tatttttg

457

<210> 29
<211> 379
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (43)..(43)
<223> n = a, c, t or g

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attttcatca tctttgggtc cttcttcacc ttgaacctgt ttattggtgt catcatagat 240
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gaaaaattat tccttggagt gttttctctg ccaaataagt acttgaattt agaacaaatg 360
ggagtatata ttataactg 379

<210> 30
<211> 393
<212> DNA
<213> Homo sapiens

<400> 30
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gccatccatt ttctatttta acattgaaaa aaatgtacaa aaggacacag ttttaaccag 180
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<210> 31
<211> 539
<212> DNA
<213> Homo sapiens

<400> 31

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<210> 32
 <211> 3403
 <212> DNA
 <213> Homo sapiens

<400> 32	
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<210> 33
 <211> 8349
 <212> DNA
 <213> Homo sapiens

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          20          25          30

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Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
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Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
          50          55          60

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Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
65          70          75          80

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Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
85 90 95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
100 105 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
115 120 125

Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
130 135 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145 150 155 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
165 170 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
180 185 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
195 200 205

Asp Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
210 215 220

Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
225 230 235 240

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
245 250 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
260 265 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
275 280 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
290 295 300

Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile

305 310 315 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
325 330 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
340 345 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
355 360 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
370 375 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385 390 395 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
405 410 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
420 425 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
435 440 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
450 455 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465 470 475 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
485 490 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
500 505 510

Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
515 520 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
530 535 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
565 570 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
610 615 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625 630 635 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
645 650 655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
660 665 670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
675 680 685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
690 695 700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
705 710 715 720

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
725 730 735

Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
740 745 750

Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
755 760 765

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
770 775 780

Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
785 790 795 800

Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
805 810 815

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
820 825 830

Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
835 840 845

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
850 855 860

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
865 870 875 880

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
885 890 895

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
900 905 910

Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
915 920 925

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
930 935 940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945 950 955 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
965 970 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
980 985 990

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
995 1000 1005

Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu
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Phe Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu
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Ile Lys Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile
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Ser Asn His Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu
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Lys Asp Gly Asn Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu
1070 1075 1080

Lys Tyr Val Val Asp Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn
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Pro Ser Leu Thr Val Thr Val Pro Ile Ala Val Gly Glu Ser Asp
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Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser Ser Glu Ser Asp Met
1115 1120 1125

Glu Glu Ser Lys Glu Lys Leu Asn Ala Thr Ser Ser Ser Glu Gly
1130 1135 1140

Ser Thr Val Asp Ile Gly Ala Pro Ala Glu Gly Glu Gln Pro Glu
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Val Glu Pro Glu Glu Ser Leu Glu Pro Glu Ala Cys Phe Thr Glu
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Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile Ser Ile Glu Glu
1175 1180 1185

Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr Cys Tyr Lys
1190 1195 1200

Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile

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Gln Arg Lys Thr Ile Lys	Thr Met Leu Glu Tyr	Ala Asp Lys Val		
1235	1240	1245		
Phe Thr Tyr Ile Phe Ile	Leu Glu Met Leu Leu	Lys Trp Val Ala		
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Tyr Gly Phe Gln Val Tyr	Phe Thr Asn Ala Trp	Cys Trp Leu Asp		
1265	1270	1275		
Phe Leu Ile Val Asp Val	Ser Leu Val Ser Leu	Thr Ala Asn Ala		
1280	1285	1290		
Leu Gly Tyr Ser Glu Leu	Gly Ala Ile Lys Ser	Leu Arg Thr Leu		
1295	1300	1305		
Arg Ala Leu Arg Pro Leu	Arg Ala Leu Ser Arg	Phe Glu Gly Met		
1310	1315	1320		
Arg Ala Val Val Asn Ala	Leu Leu Gly Ala Ile	Pro Ser Ile Met		
1325	1330	1335		
Asn Val Leu Leu Val Cys	Leu Ile Phe Trp Leu	Ile Phe Ser Ile		
1340	1345	1350		
Met Gly Val Asn Leu Phe	Ala Gly Lys Phe Tyr	His Cys Ile Asn		
1355	1360	1365		
Tyr Thr Thr Gly Glu Met	Phe Asp Val Ser Val	Val Asn Asn Tyr		
1370	1375	1380		
Ser Glu Cys Lys Ala Leu	Ile Glu Ser Asn Gln	Thr Ala Arg Trp		
1385	1390	1395		
Lys Asn Val Lys Val Asn	Phe Asp Asn Val Gly	Leu Gly Tyr Leu		
1400	1405	1410		
Ser Leu Leu Gln Val Ala	Thr Phe Lys Gly Trp	Met Asp Ile Met		
1415	1420	1425		

Tyr	Ala	Ala	Val	Asp	Ser	Arg	Asn	Val	Glu	Leu	Gln	Pro	Lys	Tyr
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Glu	Asp	Asn	Leu	Tyr	Met	Tyr	Leu	Tyr	Phe	Val	Ile	Phe	Ile	Ile
1445						1450					1455			
Phe	Gly	Ser	Phe	Phe	Thr	Leu	Asn	Leu	Phe	Ile	Gly	Val	Ile	Ile
1460						1465					1470			
Asp	Asn	Phe	Asn	Gln	Gln	Lys	Lys	Lys	Phe	Gly	Gly	Gln	Asp	Ile
1475						1480					1485			
Phe	Met	Thr	Glu	Glu	Gln	Lys	Lys	Tyr	Tyr	Asn	Ala	Met	Lys	Lys
1490						1495					1500			
Leu	Gly	Ser	Lys	Lys	Pro	Gln	Lys	Pro	Ile	Pro	Arg	Pro	Ala	Asn
1505						1510					1515			
Lys	Phe	Gln	Gly	Met	Val	Phe	Asp	Phe	Val	Thr	Lys	Gln	Val	Phe
1520						1525					1530			
Asp	Ile	Ser	Ile	Met	Ile	Leu	Ile	Cys	Leu	Asn	Met	Val	Thr	Met
1535						1540					1545			
Met	Val	Glu	Thr	Asp	Asp	Gln	Ser	Gln	Glu	Met	Thr	Asn	Ile	Leu
1550						1555					1560			
Tyr	Trp	Ile	Asn	Leu	Val	Phe	Ile	Val	Leu	Phe	Thr	Gly	Glu	Cys
1565						1570					1575			
Val	Leu	Lys	Leu	Ile	Ser	Leu	Arg	Tyr	Tyr	Tyr	Phe	Thr	Ile	Gly
1580						1585					1590			
Trp	Asn	Ile	Phe	Asp	Phe	Val	Val	Val	Ile	Leu	Ser	Ile	Val	Gly
1595						1600					1605			
Met	Phe	Leu	Ala	Glu	Leu	Ile	Glu	Lys	Tyr	Phe	Val	Ser	Pro	Thr
1610						1615					1620			
Leu	Phe	Arg	Val	Ile	Arg	Leu	Ala	Arg	Ile	Gly	Arg	Ile	Leu	Arg
1625						1630					1635			

Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu
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Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe
1655 1660 1665

Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala
1670 1675 1680

Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn Phe Glu
1685 1690 1695

Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser
1700 1705 1710

Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro
1715 1720 1725

Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys
1730 1735 1740

Gly Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser
1745 1750 1755

Tyr Ile Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala
1760 1765 1770

Val Ile Leu Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Ala Glu
1775 1780 1785

Pro Leu Ser Glu Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu
1790 1795 1800

Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu
1805 1810 1815

Ser Asp Phe Ala Asp Ala Leu Asp Pro Pro Leu Leu Ile Ala Lys
1820 1825 1830

Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met Val Ser
1835 1840 1845

Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys
1850 1855 1860

Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
1865 1870 1875

Met Glu Glu Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr
1880 1885 1890

Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser
1895 1900 1905

Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu Leu Lys Gln
1910 1915 1920

Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys Gly Lys
1925 1930 1935

Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp Lys
1940 1945 1950

Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser
1955 1960 1965

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1985 1990 1995

Asp Ile Arg Glu Ser Lys Lys
2000 2005

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<213> Homo sapiens

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35 40 45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
50 55 60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
65 70 75 80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
85 90 95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
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Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
115 120 125

Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
130 135 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
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Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
165 170 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
180 185 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
195 200 205

Asn Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
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Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
225 230 235 240

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
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Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
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Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
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Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
290 295 300

Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile
305 310 315 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
325 330 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
340 345 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
355 360 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
370 375 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385 390 395 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
405 410 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
420 425 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
435 440 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
450 455 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465 470 475 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
485 490 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
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Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
515 520 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
530 535 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
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Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
565 570 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
610 615 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625 630 635 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
645 650 655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
660 665 670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
675 680 685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
690 695 700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu

705 710 715 720

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
725 730 735

Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
740 745 750

Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
755 760 765

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
770 775 780

Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
785 790 795 800

Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
805 810 815

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
820 825 830

Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
835 840 845

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
850 855 860

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
865 870 875 880

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
885 890 895

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
900 905 910

Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
915 920 925

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
930 935 940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945 950 955 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
965 970 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
980 985 990

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
995 1000 1005

Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu
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Phe Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu
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Ile Lys Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile
1040 1045 1050

Ser Asn His Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu
1055 1060 1065

Lys Asp Gly Asn Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu
1070 1075 1080

Lys Tyr Val Val Asp Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn
1085 1090 1095

Pro Ser Leu Thr Val Thr Val Pro Ile Ala Val Gly Glu Ser Asp
1100 1105 1110

Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser Ser Glu Ser Asp Met
1115 1120 1125

Glu Glu Ser Lys Glu Lys Leu Asn Ala Thr Ser Ser Ser Glu Gly
1130 1135 1140

Ser Thr Val Asp Ile Gly Ala Pro Ala Glu Gly Glu Gln Pro Glu
1145 1150 1155

Val	Glu	Pro	Glu	Glu	Ser	Leu	Glu	Pro	Glu	Ala	Cys	Phe	Thr	Glu
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Asp	Cys	Val	Arg	Lys	Phe	Lys	Cys	Cys	Gln	Ile	Ser	Ile	Glu	Glu
1175						1180					1185			
Gly	Lys	Gly	Lys	Leu	Trp	Trp	Asn	Leu	Arg	Lys	Thr	Cys	Tyr	Lys
1190						1195					1200			
Ile	Val	Glu	His	Asn	Trp	Phe	Glu	Thr	Phe	Ile	Val	Phe	Met	Ile
1205						1210					1215			
Leu	Leu	Ser	Ser	Gly	Ala	Leu	Ala	Phe	Glu	Asp	Ile	Tyr	Ile	Glu
1220						1225					1230			
Gln	Arg	Lys	Thr	Ile	Lys	Thr	Met	Leu	Glu	Tyr	Ala	Asp	Lys	Val
1235						1240					1245			
Phe	Thr	Tyr	Ile	Phe	Ile	Leu	Glu	Met	Leu	Leu	Lys	Trp	Val	Ala
1250						1255					1260			
Tyr	Gly	Phe	Gln	Val	Tyr	Phe	Thr	Asn	Ala	Trp	Cys	Trp	Leu	Asp
1265						1270					1275			
Phe	Leu	Ile	Val	Asp	Val	Ser	Leu	Val	Ser	Leu	Thr	Ala	Asn	Ala
1280						1285					1290			
Leu	Gly	Tyr	Ser	Glu	Leu	Gly	Ala	Ile	Lys	Ser	Leu	Arg	Thr	Leu
1295						1300					1305			
Arg	Ala	Leu	Arg	Pro	Leu	Arg	Ala	Leu	Ser	Arg	Phe	Glu	Gly	Met
1310						1315					1320			
Arg	Ala	Val	Val	Asn	Ala	Leu	Leu	Gly	Ala	Ile	Pro	Ser	Ile	Met
1325						1330					1335			
Asn	Val	Leu	Leu	Val	Cys	Leu	Ile	Phe	Trp	Leu	Ile	Phe	Ser	Ile
1340						1345					1350			
Met	Gly	Val	Asn	Leu	Phe	Ala	Gly	Lys	Phe	Tyr	His	Cys	Ile	Asn
1355						1360					1365			

Tyr Thr Thr Gly Glu Met Phe Asp Val Ser Val Val Asn Asn Tyr	1370	1375	1380
Ser Glu Cys Lys Ala Leu Ile Glu Ser Asn Gln Thr Ala Arg Trp	1385	1390	1395
Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Leu Gly Tyr Leu	1400	1405	1410
Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met	1415	1420	1425
Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr	1430	1435	1440
Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile	1445	1450	1455
Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile	1460	1465	1470
Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile	1475	1480	1485
Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys	1490	1495	1500
Leu Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn	1505	1510	1515
Lys Phe Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe	1520	1525	1530
Asp Ile Ser Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met	1535	1540	1545
Met Val Glu Thr Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu	1550	1555	1560
Tyr Trp Ile Asn Leu Val Phe Ile Val Leu Phe Thr Gly Glu Cys	1565	1570	1575
Val Leu Lys Leu Ile Ser Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly			

1580	1585	1590
Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile Val Gly		
1595	1600	1605
Met Phe Leu Ala Glu Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr		
1610	1615	1620
Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg		
1625	1630	1635
Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu		
1640	1645	1650
Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe		
1655	1660	1665
Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala		
1670	1675	1680
Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn Phe Glu		
1685	1690	1695
Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser		
1700	1705	1710
Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro		
1715	1720	1725
Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys		
1730	1735	1740
Gly Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser		
1745	1750	1755
Tyr Ile Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala		
1760	1765	1770
Val Ile Leu Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Ala Glu		
1775	1780	1785
Pro Leu Ser Glu Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu		
1790	1795	1800

Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu
1805 1810 1815

Ser Asp Phe Ala Asp Ala Leu Asp Pro Pro Leu Leu Ile Ala Lys
1820 1825 1830

Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met Val Ser
1835 1840 1845

Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys
1850 1855 1860

Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
1865 1870 1875

Met Glu Glu Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr
1880 1885 1890

Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser
1895 1900 1905

Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu Leu Lys Gln
1910 1915 1920

Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys Gly Lys
1925 1930 1935

Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp Lys
1940 1945 1950

Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser
1955 1960 1965

Thr Thr Ser Pro Pro Ser Tyr Asp Ser Val Thr Lys Pro Glu Lys
1970 1975 1980

Glu Lys Phe Glu Lys Asp Lys Ser Glu Lys Glu Asp Lys Gly Lys
1985 1990 1995

Asp Ile Arg Glu Ser Lys Lys
2000 2005

<210> 37
<211> 912
<212> DNA
<213> Homo sapiens

<400> 37
gaattcttta tatgggttga atgactttct gacatagcaa ataaaaagca tgaggagaag 60
cattatctgt taacaaaatt aacacttaaa atcaacaaag ttttaatgtt tcgttccaag 120
aaaagcctgt ggaagatcag ttccacaact gagagctttg ggctgcttca gacatatgtc 180
tgtgtgtacg ctgtgaaggt gtttctcttc acagttcccc gccctctagt ggtagttaca 240
ataatgccat tttgtagtcc ctgtacagga aatgcctctt cttacttcag ttaccagaat 300
ccttttacag gaagttaggt gtggtctttg aaggagaatt aaaaaaaaaa aaaaaaaaaa 360
aaaaaagatt tttttttttt taaagcatga tggaatttta gctgcagtct tcttggggcc 420
agcttatcaa tcccaaactc tgggggtaaa agattctaca ggggtaatgt tttattattc 480
ttattatgct tattctctgt gatgcttctc tacctttaca gtagtagaat ccttggggaa 540
atctgcagag ggaccacttt cattttgaag ctgctggctg catgttttag catgtctctt 600
ctattagaga atccaggcat ggacgtttcc tccccagtg tgcaaggacc atcttcatgc 660
ctatgtctgt cgctaggcat gagggctctc aggaatgggt gaaaaaatg agggatgttt 720
tgagggcact ataatactgg ggagggcagt ctgctagctg gtagctgaaa ggtcctgggt 780
tacttcaaca ttttttttaa ataaaactgt gcagtagttt ttgttatttt agggttccct 840
ctgttttatc tgggtgatgc tgcagaagtg aactgcataa cacatttcac tcttagaaat 900
gcattccata ta 912

<210> 38
<211> 722
<212> DNA
<213> Homo sapiens

<400> 38
ctcagtgcac gtaactgaca caatcacctc tatctaattg tcatgttctt tacctcctgt 60
tctgtagcac tttcttatgc aaggagctaa acagtgatta aaggagcagg atgaaaagat 120
ggcacagtca gtgctggtag cgccaggacc tgacagcttc cgcttcttta ccagggaatc 180
ccttgctgct attgaacaac gcattgcaga agagaaagct aagagaccca aacaggaacg 240
caaggatgag gatgatgaaa atggcccaaa gccaaacagt gacttggag cagsaaaatc 300
tcttccattt atttatggag acattcctcc agagatgggtg tcagtgtccc tggaggatct 360

ggacccctac tatatcaata agaaagtgag ttcttagtca agttgccttc actgcctatt	420
tactaattgg ttctgggcta gtcccaggga tgatggtgaa gaaggctggc ctccctccct	480
ctgtctaaag taccactaag atgctggatg ggccctgaccg tgtaatggac caatgatcct	540
agaagtcttt tggaagcact catttgaacc tgcatttggtg agacaggcag agaactggtg	600
aggcatcctc cagcgcgga attaaggaag gacaaaagcc tattcacctt cttgaataca	660
aattatatgc ttaaaccagt gtaaattgac cctgattccc taataatgtt gagaagcaaa	720
aa	722

<210> 39
 <211> 561
 <212> DNA
 <213> Homo sapiens

<400> 39	
cctatggcat tgatcacaaa ttttcttaat aatcctcatg tcatttatca aatttaggaa	60
agtttatagt gctcagaaaa aaaaagcatc tatcttcatg tcatatgatg gtaattatta	120
tggtatacac tattttacag ggcaatattt ataaataatg gttttacttt tctcttaaaa	180
tattcttaat atatattcta agttttgttt tatgtgtgtg gttttctttt tcagacgttt	240
atagtattga ataaagggaa agcaatctct cgattcagtg ccacccctgc cctttacatt	300
ttaactccct tcaaccctat tagaaaatta gctattaaga ttttggtaca ttcatacctt	360
ttttcaaata gtcacttaat atgattttct tctttgacca agttattgag ctacacattt	420
tccaaaatat ctgtggttgg caatgttatg tgttctttct ttttctttcc ttttactcaa	480
tcgttagcat gttgcaaaaat gagatcacag gtaagtgaat tactttcccc cgtcttctaa	540
gtgtttcttc tctacccaac t	561

<210> 40
 <211> 510
 <212> DNA
 <213> Homo sapiens

<400> 40	
acctaaatag cctcaaaata gttgatggct tggcctgaag acaagatcta aatatgaggt	60
tgctgagtta tagaaatggc aaaaaaagg gtcaataata gaataataag caacaaaata	120
atagtaagca ctaaagtttt aaacttcatg gtggtgaagg catggtagtg cataaaagta	180
agatttttcc attgaacttt gtcttccttg acgatattct actttattca atatgctcat	240

tatgtgcacg attcttacca actgtgtatt tatgaccatg agtaaccctc cagactggac	300
aaagaatgtg gagtaagtat aaatatTTTT caatattgac ctccctttat gtttcatatt	360
gtgcttttaa caccttgaga cctcctcaat ttctttaaca aatcatgcta gctactgtta	420
accagaccct gattcaaatt catttctgtc actaaatgtc ttctaggaca aagcttgtag	480
tgggctcact tagttgtgta aattactgca	510

<210> 41
 <211> 370
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (293)..(293)
 <223> n= a, c, t or g

<400> 41	
taagatatgt acttgtaaata taaccactag atttttaatg tgagcttggc tattgtctct	60
caggatatacc ttacaggaa ttatacttt tgaatcactt attaaaatac ttgcaagggg	120
cttttgttta gaagatttca catttttacg ggatccatgg aattggttgg atttcacagt	180
cattactttt gcgtaagtat ctttaatacat ttctatcctt ggaagagtaa atcactggtg	240
ggagcctata ctatatTTTt cttggtggct tgccttgaca gaccaagcat ttntcttagt	300
aatcatagtt ttcttccaat caaattatcc agtttggaga aattaggaac tatcatagta	360
aattacatgg	370

<210> 42
 <211> 370
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (133)..(133)
 <223> n = a, c, t or g

<400> 42	
caattagcac tgtaaagtaa taaagtttcc caaataacag agattatgat tgatgacaat	60
gccattttcc tcttaattgg gaaagctgat ggcgacactc atgaaattaa aaaggtcttg	120
atgaaagacc aangaagacg tagatttccc taaattctga ataactctga tttaattcta	180
caggatgta acagaatttg taaacctagg caatgtttca gctcttcgaa ctttcagagt	240

cttgagagct ttgaaaacta tttctgtaat tccaggtaag aagaaaatgg tataagggtgg	300
taggcccctt atatctccaa ctgtttcttg tgttctgtca ttgtgtttgt gtgtgaaccc	360
cctattacag	370

<210> 43
 <211> 410
 <212> DNA
 <213> Homo sapiens

<400> 43	
gtaagaagaa aatggtataa ggtggtaggc cccttatatc tccaactggt tcttgtgttc	60
tgtcattgtg tttgtgtgtg aacccctat tacagatatg tgacagagtt tgtggacctg	120
ggcaatgtct cagcgttgag aacattcaga gttctccgag cattgaaaac aatttcagtc	180
attccagggtg agagctaggt taaacaccga ggctgacttt agctacagtg gtgctacaat	240
cacagctttt gtgcagaagc cttgttgcta gttgcatatt gcaaataaat atgtaaaaaa	300
gcaagaattg gtacatcatt ttttgatgg atttgattct ttgcttttta cccgttgctt	360
tctttaaaac tattctaaat cagcctttga gtttaacaag tgttgcata	410

<210> 44
 <211> 1066
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (229)..(229)
 <223> n = a, c, t or g

<400> 44	
aaagagtgtt tggaaataca catttggttc atttccattc acagttttct aatgaacata	60
caagtctctgc tttcattcat tttcaccagc tagtaggctt ttcattgaaa tgttattcaa	120
tcacaaacat taaactaata ttggtggcat tctgcatgac atttttatct tccaggccaa	180
gctcatgata tttttgccgg taaaatagct gttgagtagt atatttaant tcccccttct	240
gattttgttt gtaggcctga agaccattgt gggggccctg atccagtcag tgaagaagct	300
ttctgatgtc atgatcttga ctgtgttctg tctaagcgtg tttgcgctaa taggattgca	360
gttgttcatg ggcaacctac gaaataaatg tttgcaatgg cctccagata attcttcctt	420
tgaaataaat atcacttcct tctttaacaa ttcattggat gggaatggta ctactttcaa	480

taggacagtg agcatattta actgggatga atatataggag gataaaagta agatatactc	540
tataaaccat taagtgtgtt agttctctaa atattaaata ttatatataa tggaaattat	600
ctcaatttag atgtgaatca agtgacttag actaatttaa gatgatttaa tacatataaa	660
agagatatca aaggatacct tattctatctt ttsttatctg tccattgata tagtaaaagt	720
tctcatttga aaatgtgttg tcttatactc atgttgaaag taatttcata ttatgccata	780
ttaaaaaagg tttatttggt agacattaat cagggttttc agtcatttta ataaataagt	840
cagtagtttg aactattcmg cgtattccac tgaaatgtcg ttaagaagac tgaggggaaa	900
taatttggcc ctatttggtt gatgcaacat atgtattgag tacatatgct atatctgaaa	960
ctagagaaac catttatcaa gatgaaataa gaatttgtgt gtcctcaga aggttaagta	1020
accctgattt agccattcac ttcattcata ttctaattag tccctt	1066

<210> 45
 <211> 385
 <212> DNA
 <213> Homo sapiens

<400> 45	
gttcaattat tgtgaaaaat cttctttagc catatatatt tattagttaa tccatctcat	60
tatgattgaa aacatttgtg agctttgcca cctaaacagg gtggctgaag tgttttacag	120
gattttaatg attctttcta ttcctttctc tttaaataagg tcacttttat tttttacagg	180
ggcaaaatga tgctctgctt tgtggcaaca gctcagatgc agggtaagtg tatgcttcct	240
actgagtttc agtccacact gctccatcag tgtcaataac ctgccacctc ccactcatcc	300
agtcccacca ctctcactc aaaaccctcc ataaattcta cttcacgggtg actctcagaa	360
tgaccaggat aagtgtagat tctca	385

<210> 46
 <211> 430
 <212> DNA
 <213> Homo sapiens

<400> 46	
tataataatg acaattatga atcacagagg aatccacaaa gtagacctta tagattctgt	60
cattatataa atcagtcacac ttagtgctga gttaagtact gggtaagggtg agagaaatcg	120
gcttttttct agtgcctgta taaaacagac attggcatat attaaaacag gaaaaccaat	180
tagcagactt gccgttattg actycctctc tttcctctaa cctaattaca gccagtgtcc	240
tgaaggatac atctgtgtga aggctggtag aaaccccaac tatggctaca cgagctttga	300

caccttttagt tgggcctttt tgtccttatt tcgtctcatg actcaagact tctgggaaaa	360
cctttatcaa ctggtgagaa cagataaaat catttttctg agaatcataa aacaccgaac	420
tcaagagaat	430

<210> 47
 <211> 646
 <212> DNA
 <213> Homo sapiens

<400> 47	
tgctgtagaa tattttatta cttagagtgt aagtttgtaa catcctatat aaaatttatt	60
aaaatctctc ttccattttg cagacactac gtgctgctgg gaaaacgtac atgatatttt	120
ttgtgctggt cattttcttg ggctcattct atctaataaa ttgatcttg gctgtggtgg	180
ccatggccta tgaggaacag aatcaggcca cattggaaga ggctgaacag aaggaagctg	240
aatttcagca gatgctcgaa cagttgaaaa agcaacaaga agaagctcag gtatagttaa	300
caagcatacg gtcctttggt tttctgtatc taaattcttt aacctaaatg ttgaggtcag	360
tggcaaggta gttgacatta gaaataggtc atatgtgttt ggtaagtgtc aggagcctgt	420
ttggttatta agaagttatt actttattgc aatgatctct gtcaatagtg tcaatagtaa	480
tggcatcaaa aaatggataa ttataattgc ttactgaca tttttttctc ccttgtgact	540
ccttgaggaa attaatagatt aacaaaggcc tcatgtactc aaacttgacg agtagataaa	600
cctacatgtc ctcagttgaa gtattttctt aggggaagag gaattc	646

<210> 48
 <211> 711
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (164)..(164)
 <223> n = a, c, t or g

<400> 48	
tatgtatcat cttccatatg aatgcgcatt ttactctttg attggtctaa taacagtgta	60
ctgtgttcta aaacacagaa taaaatggag aattgttttt caagattatc ttcattgat	120
tgaagctcaa ttaagcagta acatgataat tatttttttaa gatnatatgc aacttccac	180
atactttgcg cccttctagg cggcagctgc agccgcattc gctgaatcaa gagacttcag	240

tggtgctggt gggataggag ttttttcaga gagttcttca gtagcatcta agttgagctc	300
caaaagtga aaagagctga aaaacagaag aaagaaaaag aaacagaaag aacagtctgg	360
agaagaagag aaaaatgaca gagtcctaaa atcgggaatct gaagacagca taagaagaaa	420
aggtttccgt ttttccttgg aaggaagtag gctgacatat gaaaagagat tttcttctcc	480
acaccaggta aaaatattaa attacatgaa ttgtgttctc ataaatTTTT taaaagaata	540
tgccagaatt taatggagag aaaaccgcct tccacctgga tggcacaatg ctttcagagt	600
agtgatgatt atcaagtgtt ttggctatca cttcagagaa tttgtgagtt ttgcaacttt	660
ttggaatccc aggaaggaaa ttttagatcc ctctgggttt ggaaaaattt g	711

<210> 49
 <211> 1026
 <212> DNA
 <213> Homo sapiens

<400> 49	
ttatggggac acttctgact atgttgaggt gtgggtaaag taggagaaaa gagagcagaa	60
gatggaaaat ggaggaagga gaaaaagcga gagtgaaata gaaaagggtga accttgtaga	120
aagtgccaaa atgccaccag cagtcatcag aggggtgctt tcttccacat gtccaatgac	180
ttatccttga gtaagtcaat gactatgaca caatgaatca aattctgttt ttcagaatgc	240
cagctcttaa ctctcttcat ctcatTTTT tttctttctt tgttattcat agtcttact	300
gagcatccgt ggctcccttt tctctccaag acgcaacagt agggcgagcc ttttcagctt	360
cagaggctga gcaaaggaca ttggctctga gaatgacttt gctgatgatg agcacagcac	420
ctttgaggac aatgacagcc gaagagactc tctgttcgtg ccgcacagac atggagaacg	480
gcgccacagc aatgtcagcc aggccagccg tgcctccagg gtgctcccca tcctgcccac	540
gaatgggaag atgcatagcg ctgtggactg caatgggtgtg gtctccctgg tcggggggccc	600
ttctaccctc acatctgctg ggcagctcct accagaggtg aggccaaacy magattgcag	660
ctgatgtgaa gagagtgtg actggtgcag gcaggagtgy ttttccatTT mcacatctaa	720
gaatttkttg agtttsttgc ccaaaggctg ggagtttgtt caatcaagct gttaactgtc	780
ttgtgaaact sttctattca gacttTycta caaagtaatt aaaaacctag gttggctgtc	840
agagaatata attagamgtm atctttcatc ayyattacta tggtatgaaa ctgcacaaaa	900
agcaaagcaa caatttatca agcataatgt tygaytaata tagttaaatt aaatccaagg	960
aaattaatgc tcacaaatta aataaatact taaggatTTT gtgattgttg ttcatttaaa	1020

aggaga

1026

<210> 50
<211> 601
<212> DNA
<213> Homo sapiens

<400> 50
ataggaaagc ccaccttgac aaaccaggg ctccccaaaa gctgaaaatc tgacagactt 60
taaacaaccc ccaataatt atcattccaa caatatctta gtgagctttt tacatctgag 120
aaagcatggg gtatatthag ttaaataaca cctgtttag gaatgctttg ggctttgctg 180
ctttcaaaaa tagtggttat ttcactgaa attctacttc tagggcacia ctactgaaac 240
agaaataaga aagagacggg ccagttctta tcatgtttcc atggatttat tggaagatcc 300
tacatcaagg caaagagcaa tgagtatagc cagtattttg accaacacca tggaaggat 360
gttaaaagtc ctgcgtcaca gttacttggg gctttcctaa tgatgaaaaa cacttcataa 420
atttcaataa aatacttctt gacttgatat tgtatcatta ttacacattt tactaaataa 480
cagtaaaatc cgtgcataac tcatggattc atatattcca cagatttttt ttttttatat 540
ttagcctgta gaaagctgct gcaaatgtaa ggtatatttg aacaccactt tcataactta 600
a 601

<210> 51
<211> 645
<212> DNA
<213> Homo sapiens

<400> 51
gcttactagc ctttctgtac tgatcctttc tatgacagca aaccattgt aaaattttcc 60
ctgttctctc agcagattaa ccataatat cttttaaaaa ctttagattt tttaaattcc 120
ttttaattta aaccaaactt gcttaataga aagtaagcag ttttcatgag gattctaact 180
ttttttcttc cagaacttga agaattcaga cagaaatgcc caccatgctg gtataaattt 240
gctaatatgt gtttgatttg ggactgttgt aaaccatggg taaagggtgaa acaccttgct 300
aacctggttg taatggaccc atttggtgac ctggccatca ccatctgcat tgtcttaaatt 360
acactcttca tggtatgga gcactatccc atgacggagc agttcagcag tgtactgtct 420
gttggaacc tggtagcct cactgagagt ttctcttctt cttgaaagag tttataattg 480
ccttagtgaa tttacatat tgctctcaaa ttaaatatca actaattggc catgtatatc 540
ttgacatcaa atgttttagc tcccttttaa ataacaaaaa aatgttgcta ccatagtgca 600

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<210> 52
<211> 485
<212> DNA
<213> Homo sapiens

<400> 52
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atntaggtct tcacagggat cttcacagca gaaatgttct tcaagataat tgccatggat 180
ccatattatt actttcaaga aggctggaat atttttgatg gttttattgt gagccttagt 240
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gtaaattaac tgggagtgtt cataaaatgt actttrtaat taattagtct tcattctcat 360
ctagtaaaaa tggcaagatt tcccatcatt ataatatatt tgaatacctt ctaaaacaga 420
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ttaaa 485

<210> 53
<211> 602
<212> DNA
<213> Homo sapiens

<400> 53
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tatataataa taaaataaaa taaaaataaa aataaaaaaa taaaaataaa ataaaattgc 120
agattttttt agaaatgcag agattaacac tgttcttgtt ttattttcca gctccgagtt 180
ttcaagttgg caaatcttg gccactcta aatatgctaa ttaagatcat tggcaattct 240
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atgtgcctta ctgtcttcat gatggcatg gtgattggaa atctagtgg atgtagcaaa 540
aacattttcc tcattttcat taaaaataat gtaatcatta aaaagtgtt aactgaagaa 600
ta 602

<210> 54
<211> 803
<212> DNA
<213> Homo sapiens

<400> 54
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tcatgaatta gcagaaatgc atgttagaat aaaataaggt gtcaagaaca atcttagaaa 180
actaatgatg gaaagcaatt gaagcaatag aatgttttga tcacctgttt ttcctgctgt 240
gtttcaggtt ctgaacctct tcttggcctt gcttttgagt tccttcagtt ctgacaatct 300
tgctgccact gatgatgata acgaaatgaa taatctccag attgctgtgg gaaggatgca 360
gaaaggaatc gattttgtta aaagaaaaat acgtgaattt attcagaaag cctttgttag 420
gaagcagaaa gcttttagatg aaattaaacc gcttgaagat ctaaataata aaaaagacag 480
ctgtatttcc aaccatacca ccatagaaat aggcaaagac ctcaattatc tcaaagacgg 540
aaatggaact actagtggca taggcagcag tgtagaaaaa tatgtcgtgg atgaaagtga 600
ttacatgtca ttataaaca accctagcct cactgtgaca gtaccaattg ctggttgaga 660
atctgacttt gaaaatttaa atactgaaga attcagcagc gagtcagata tggaggaaag 720
caaagaggta aaatgttaaa taaggagata ttttgggtga tataatctgt gttaaatatc 780
aggtgtttta tgctgtcttc tgt 803

<210> 55
<211> 615
<212> DNA
<213> Homo sapiens

<220>
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<222> (90)..(90)
<223> n = a, c, t or g

<220>
<221> misc_feature
<222> (378)..(386)
<223> n = a, c, t or g

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tggcattatg ttttaagttct taattacaga tcaagaaaaa tgcatacaga agatgggggg	180
gggcacacct aattaatttt tatatttaga ttaaagaaaa taattaaatg tgtttttttg	240
tgggattgat tttcagaagc taaatgcaac tagttcatct gaaggcagca cggttgatat	300
tggagctccc gccgaggag aacagcctga ggttgaacct gaggaatccc ttgaacctga	360
agcctgtttt acagaagnnn nnnnnnaagc aaaacaataa catatgtggt cttgagtatc	420
ctcttttcta cccatttttt cctatttatt taaatgtctg tttatttgtc taccatctag	480
ttcatctatc tatctgtatc tatctatcta tctatctatc tagtaatcat ctatacctat	540
ccaacaactg tacatttatt tgtttttttt ttttgcattt gctgtttgaa aaaaaatgca	600
acgtttttaa ggcaa	615

<210> 56
 <211> 400
 <212> DNA
 <213> Homo sapiens

<400> 56	
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gtcttcattt ttttcccaca tatttttagac tgtgtacgga agttcaagtg ttgtcagata	180
agcatagaag aaggcaaagg gaaactctgg tggaatttga ggaaaacatg ctataagata	240
gtggagcaca attggttcga aaccttcatt gtcttcatga ttctgctgag cagtggggct	300
ctggtaggtg atgcatgatc cactcettca cctttcatct gaaatctttt ccctttccct	360
tcaatcaact catattaccc actttttaat taagggtgtt	400

<210> 57
 <211> 560
 <212> DNA
 <213> Homo sapiens

<400> 57	
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atgataaagt aaaattcagc catgggaaac attaaacctt ccagccttag gcacctgata	120
agagcttgca tcgtttcctt ttttaagaaa tcatcaatta gagactgttt ctgatcataa	180
aatttaatatg aattttttga cttacaggcc tttgaagata tatacattga gcagcgaaaa	240
accattaaga ccatgtaga atatgctgac aagggttttca cttacatatt cattctggaa	300

atgctgctaa agtgggttgc atatggtttt caagtgtatt ttaccaatgc ctggtgctgg	360
ctagacttcc tgattgttga tgtgagtatg ctgcactttg ctgctttatt cattggcata	420
tatgtaatag ttctagcaat ggtgcctgac acagtgtagg cactcagtaa cactgtatca	480
gccccaatat aaattatggt tctcatttca cagtgcagagg atgcctcaaa acatttttta	540
ccaattttaa tacatatata	560

<210> 58
 <211> 480
 <212> DNA
 <213> Homo sapiens

<400> 58	
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gcaaggctga actgtgtaga cttttttata tgtaaataag aaaattgtgt tgctttttct	180
gtataggtct cactgggttag cttaactgca aatgccttgg gttactcaga acttggtgcc	240
atcaaatecc tcagaacact aagagctctg aggccactga gagctttgtc ccggtttgaa	300
ggaatgaggg taagactgaa tgccttagag tttgtcagaa ttattattga gagcagactg	360
acactttgta ccatggaaat gtcaaattta tggagaattt gtgtcttaca cattcatact	420
gacatagcta atcaatcaaa aataatattt accagatgcc cataatactt ggcactgctg	480

<210> 59
 <211> 640
 <212> DNA
 <213> Homo sapiens

<400> 59	
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tttgttgttg gcttttctact tttttttcct tctcatcctg tgccagggtg ttgtaaagtc	180
tcttttagga gccattccat ctatcatgaa tgtacttctg gtttgtctga tcttttggt	240
aatattcagt atcatgggag tgaatctctt tgctggcaag ttttaccatt gtattaatta	300
caccactgga gagatgtttg atgtaagcgt ggtcaacaac tacagtgagt gcaaagctct	360
cattgagagc aatcaaactg ccagggtggaa aaatgtgaaa gttaaactttg ataacgtagg	420
acttgatat ctgtctctac ttcaagtagt aagtaatcac tttattattt tccatgatgt	480
gtaattaaaa tgagtctaaa gtttttcttc ctcataatga gatatccacc tgtagaatg	540

gctattatca aacagataaa tgacaataaa tgctggcaag aatgtgaaga aaaggggaacc	600
cttgtagcatt gttggcaggg atgtaaatta gtatagcttt	640

<210> 60
 <211> 480
 <212> DNA
 <213> Homo sapiens

<400> 60	
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ttattttcta aaattataat tttgggaaaa aagaaaatga tatgactttt cttacaggcc	180
acgtttaagg gatggatgga tattatgtat gcagctgttg attcacgaaa tgtaagtcta	240
gtagagggga aattgttttag ttgtattaaa tgtatatttc tacaatattg taatttagtg	300
atattgtcaa taaaataaaa ttatgtgctt aatttataaa acccatctat attataagga	360
taaaatattt aatcatacta tttctttcaa aattatcata ggatgatattt ctctaatacac	420
tctgtatctt ttaacatatc ttttctagta tttagcaagg cacctgacac aaaactttat	480

<210> 61
 <211> 366
 <212> DNA
 <213> Homo sapiens

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cctgtacatg tatctttatt ttgtcatctt tattattttt gggttcattct ttaccttgaa	180
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aaaacttcat ccttgctctg aaatatgaac taaatatttc atactcttct ctttagcctc	300
caaaatgcaa tcacaaaaa aagaatataa aattcagaaa ttattttgag acatttgata	360
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<210> 62
 <211> 560
 <212> DNA
 <213> Homo sapiens

<400> 62	
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aaatatgact aatatggcat aatttatata ttgaataaag gcatctctat aaatacagat	120
attagtaaca atagaatgaa atgtgggagc caattttcac atgattacta aggtggattt	180
tatagccagc aaagaacaca attttaacaa gtgttgcttt catttcttta ctttgagggt	240
caagacattt ttatgacaga agaacagaag aaatactaca atgcaatgaa aaaactgggt	300
tcaaagaaac cacaaaaacc catacctcga cctgctgtaa gaataacata ttttcattgc	360
ctgttaaaac tatattacct aaccgtttca cagcccgaat ttctagaaac tagttatttt	420
tgtggatttg taacacaaag ttttttacct taacaatggg actagctagc cttaaagct	480
tgaaaaatgt actttacata tataatatgt ataaattata taatgcataa catattttat	540
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<210> 63
 <211> 650
 <212> DNA
 <213> Homo sapiens

<400> 63	
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aaagctacat tttttgttgc tttcttaaaa tcagaagaat tgaattcgat tttttttaag	120
gtttctaattg gaactttttac atattatttg ttccagaaca aattccaagg aatgggtcttt	180
gattttgtaa ccaaacaagt ctttgatata agcatcatga tctcatctg ccttaacatg	240
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cgttactact atttcactat tggatggaat atttttgatt ttgtgggtgg cattctctcc	420
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tttaaaactt tagagggtgt tttcactaat ctttctcatt catcccaaac tcccaaataa	540
aaatctaata gtccattggt ttagtttttag ttgcccattt ctctaattgc atgctgtgct	600
tgaaatgatg agtggaatac aaggaattta tattttcagc tttcatttat	650

<210> 64
 <211> 3700
 <212> DNA
 <213> Homo sapiens

<400> 64	
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aatgtttctg	gctgaactga	tagaaaagta	ttttgtgtcc	cctaccctgt	tccgagtgat	240
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<210> 65
 <211> 9112
 <212> DNA
 <213> Homo sapiens

<400> 65	
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ctctgtggtc aaaaaaaaaa aaaaaaaaaa aagctgaaca gctgcagagg aagacacgtt	180
ataccetaac catcttggat gctgggcttt gttatgctgt aattcataag gctctgtttt	240
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ggcaaaaaga ccctttactc tgtggaaatg gctcagatgc aggccagtgt ccagaaggat	1680
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cctgtctctc aaatgatcag acaaagggtg tttgccagag agataaaatt tttgctcaaa	7020
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<213> Homo sapiens

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<223> Xaa = any amino acid

<400> 67

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35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
85 90 95

Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
130 135 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
180 185 190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Asp
195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
260 265 270

Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
275 280 285

Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
290 295 300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
305 310 315 320

Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
325 330 335

Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
340 345 350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
355 360 365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
370 375 380

Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr

385 390 395 400

Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
405 410 415

Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
420 425 430

Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
435 440 445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
450 455 460

Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
465 470 475 480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
485 490 495

Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
500 505 510

Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
515 520 525

Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
530 535 540

Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
565 570 575

Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
610 615 620

Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
625 630 635 640

Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
645 650 655

Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
660 665 670

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
675 680 685

Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
690 695 700

Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
705 710 715 720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
725 730 735

Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
740 745 750

Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
755 760 765

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
770 775 780

Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
785 790 795 800

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
805 810 815

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
820 825 830

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
835 840 845

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
850 855 860

Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
865 870 875 880

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
885 890 895

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
900 905 910

Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
915 920 925

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
930 935 940

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
945 950 955 960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
965 970 975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
980 985 990

Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
995 1000 1005

Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser
1010 1015 1020

Gly Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu
1025 1030 1035

Asn Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr
1040 1045 1050

Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr
1055 1060 1065

Glu Glu	Phe Ser Ser Glu Ser	Glu Leu Glu Glu Ser	Lys Glu Lys
1070	1075	1080	
Leu Asn	Ala Thr Ser Ser Ser	Glu Gly Ser Thr Val	Asp Val Val
1085	1090	1095	
Leu Pro	Arg Glu Gly Glu Gln	Ala Glu Thr Glu Pro	Glu Glu Asp
1100	1105	1110	
Leu Lys	Pro Glu Ala Cys Phe	Thr Glu Gly Cys Ile	Lys Lys Phe
1115	1120	1125	
Pro Phe	Cys Gln Val Ser Thr	Glu Glu Gly Lys Gly	Lys Ile Trp
1130	1135	1140	
Trp Asn	Leu Arg Lys Thr Cys	Tyr Ser Ile Val Glu	His Asn Trp
1145	1150	1155	
Phe Glu	Thr Phe Ile Val Phe	Met Ile Leu Leu Ser	Ser Gly Ala
1160	1165	1170	
Leu Ala	Phe Glu Asp Ile Tyr	Ile Glu Gln Arg Lys	Thr Ile Lys
1175	1180	1185	
Thr Met	Leu Glu Tyr Ala Asp	Lys Val Phe Thr Tyr	Ile Phe Ile
1190	1195	1200	
Leu Glu	Met Leu Leu Lys Trp	Val Ala Tyr Gly Phe	Gln Thr Tyr
1205	1210	1215	
Phe Thr	Asn Ala Trp Cys Trp	Leu Asp Phe Leu Ile	Val Asp Val
1220	1225	1230	
Ser Leu	Val Ser Leu Val Ala	Asn Ala Leu Gly Tyr	Ser Glu Leu
1235	1240	1245	
Gly Ala	Ile Lys Ser Leu Arg	Thr Leu Arg Ala Leu	Arg Pro Leu
1250	1255	1260	
Arg Ala	Leu Ser Arg Phe Glu	Gly Met Arg Val Val	Val Asn Ala
1265	1270	1275	
Leu Val	Gly Ala Ile Pro Ser	Ile Met Asn Val Leu	Leu Val Cys

1280		1285		1290
Leu Ile Phe Trp Leu Ile Phe	Ser Ile Met Gly Val	Asn Leu Phe		
1295	1300	1305		
Ala Gly Lys Phe Tyr His Cys	Val Asn Met Thr Thr	Gly Asn Met		
1310	1315	1320		
Phe Asp Ile Ser Asp Val Asn	Asn Leu Ser Asp Cys	Gln Ala Leu		
1325	1330	1335		
Gly Lys Gln Ala Arg Trp Lys	Asn Val Lys Val Asn	Phe Asp Asn		
1340	1345	1350		
Val Gly Ala Gly Tyr Leu Ala	Leu Leu Gln Val Ala	Thr Phe Lys		
1355	1360	1365		
Gly Trp Met Asp Ile Met Tyr	Ala Ala Val Asp Ser	Arg Asp Val		
1370	1375	1380		
Lys Leu Gln Pro Val Tyr Glu	Glu Asn Leu Tyr Met	Tyr Leu Tyr		
1385	1390	1395		
Phe Val Ile Phe Ile Ile Phe	Gly Ser Phe Phe Thr	Leu Asn Leu		
1400	1405	1410		
Phe Ile Gly Val Ile Ile Asp	Asn Phe Asn Gln Gln	Lys Lys Lys		
1415	1420	1425		
Phe Gly Gly Gln Asp Ile Phe	Met Thr Glu Glu Gln	Lys Lys Tyr		
1430	1435	1440		
Tyr Asn Ala Met Lys Lys Leu	Gly Ser Lys Lys Pro	Gln Lys Pro		
1445	1450	1455		
Ile Pro Arg Pro Ala Asn Lys	Phe Gln Gly Met Val	Phe Asp Phe		
1460	1465	1470		
Val Thr Arg Gln Val Phe Asp	Ile Ser Ile Met Ile	Leu Ile Cys		
1475	1480	1485		
Leu Asn Met Val Thr Met Met	Val Glu Thr Asp Asp	Gln Gly Lys		
1490	1495	1500		

Tyr Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val
1505 1510 1515

Leu Phe Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His
1520 1525 1530

Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val
1535 1540 1545

Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys
1550 1555 1560

Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg
1565 1570 1575

Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg
1580 1585 1590

Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn
1595 1600 1605

Ile Gly Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe
1610 1615 1620

Gly Met Ser Asn Phe Ala Tyr Val Lys Lys Glu Ala Gly Ile Asp
1625 1630 1635

Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu
1640 1645 1650

Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro
1655 1660 1665

Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp Thr Ile His
1670 1675 1680

Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser Val Gly
1685 1690 1695

Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val Val
1700 1705 1710

Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
1715 1720 1725

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met
1730 1735 1740

Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe
1745 1750 1755

Ile Glu Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro
1760 1765 1770

Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met
1775 1780 1785

Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile
1790 1795 1800

Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met
1805 1810 1815

Asp Ala Leu Arg Ile Gln Met Glu Asp Arg Phe Met Ala Ser Asn
1820 1825 1830

Pro Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg
1835 1840 1845

Lys Gln Glu Glu Val Ser Ala Ala Ile Ile Gln Arg Asn Phe Arg
1850 1855 1860

Cys Tyr Leu Leu Lys Gln Arg Leu Lys Asn Ile Ser Ser Asn Tyr
1865 1870 1875

Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp Leu Pro Ile Lys Gln
1880 1885 1890

Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser Thr Pro Glu Lys
1895 1900 1905

Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser Tyr Asp Ser
1910 1915 1920

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 1925 1930 1935

Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln Lys
 1940 1945 1950

<210> 68
 <211> 1951
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 <213> Homo sapiens

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 <223> Xaa = any amino acid

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Ala Ala Glu Glu
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Lys Ala Lys Lys Pro Lys Lys Glu Gln Asp Asn Asp Asp Glu Asn Lys
 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
 85 90 95

Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
 100 105 110

Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
 130 135 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
180 185 190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Ser
195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
260 265 270

Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
275 280 285

Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
290 295 300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
305 310 315 320

Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
325 330 335

Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
340 345 350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
355 360 365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr

370 375 380

Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
385 390 395 400

Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
405 410 415

Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
420 425 430

Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
435 440 445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
450 455 460

Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
465 470 475 480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
485 490 495

Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
500 505 510

Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
515 520 525

Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
530 535 540

Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
565 570 575

Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
610 615 620

Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
625 630 635 640

Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
645 650 655

Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
660 665 670

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
675 680 685

Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
690 695 700

Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
705 710 715 720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
725 730 735

Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
740 745 750

Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
755 760 765

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
770 775 780

Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
785 790 795 800

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
805 810 815

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
820 825 830

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
835 840 845

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
850 855 860

Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
865 870 875 880

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
885 890 895

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
900 905 910

Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
915 920 925

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
930 935 940

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
945 950 955 960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
965 970 975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
980 985 990

Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
995 1000 1005

Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser
1010 1015 1020

Gly Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu
1025 1030 1035

Asn Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr
1040 1045 1050

Val	Pro	Ile	Ala	Val	Gly	Glu	Ser	Asp	Phe	Glu	Asn	Leu	Asn	Thr
1055						1060					1065			
Glu	Glu	Phe	Ser	Ser	Glu	Ser	Glu	Leu	Glu	Glu	Ser	Lys	Glu	Lys
1070						1075					1080			
Leu	Asn	Ala	Thr	Ser	Ser	Ser	Glu	Gly	Ser	Thr	Val	Asp	Val	Val
1085						1090					1095			
Leu	Pro	Arg	Glu	Gly	Glu	Gln	Ala	Glu	Thr	Glu	Pro	Glu	Glu	Asp
1100						1105					1110			
Leu	Lys	Pro	Glu	Ala	Cys	Phe	Thr	Glu	Gly	Cys	Ile	Lys	Lys	Phe
1115						1120					1125			
Pro	Phe	Cys	Gln	Val	Ser	Thr	Glu	Glu	Gly	Lys	Gly	Lys	Ile	Trp
1130						1135					1140			
Trp	Asn	Leu	Arg	Lys	Thr	Cys	Tyr	Ser	Ile	Val	Glu	His	Asn	Trp
1145						1150					1155			
Phe	Glu	Thr	Phe	Ile	Val	Phe	Met	Ile	Leu	Leu	Ser	Ser	Gly	Ala
1160						1165					1170			
Leu	Ala	Phe	Glu	Asp	Ile	Tyr	Ile	Glu	Gln	Arg	Lys	Thr	Ile	Lys
1175						1180					1185			
Thr	Met	Leu	Glu	Tyr	Ala	Asp	Lys	Val	Phe	Thr	Tyr	Ile	Phe	Ile
1190						1195					1200			
Leu	Glu	Met	Leu	Leu	Lys	Trp	Val	Ala	Tyr	Gly	Phe	Gln	Thr	Tyr
1205						1210					1215			
Phe	Thr	Asn	Ala	Trp	Cys	Trp	Leu	Asp	Phe	Leu	Ile	Val	Asp	Val
1220						1225					1230			
Ser	Leu	Val	Ser	Leu	Val	Ala	Asn	Ala	Leu	Gly	Tyr	Ser	Glu	Leu
1235						1240					1245			
Gly	Ala	Ile	Lys	Ser	Leu	Arg	Thr	Leu	Arg	Ala	Leu	Arg	Pro	Leu
1250						1255					1260			
Arg	Ala	Leu	Ser	Arg	Phe	Glu	Gly	Met	Arg	Val	Val	Val	Asn	Ala

1265		1270		1275
Leu Val Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys				
1280		1285		1290
Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe				
1295		1300		1305
Ala Gly Lys Phe Tyr His Cys Val Asn Met Thr Thr Gly Asn Met				
1310		1315		1320
Phe Asp Ile Ser Asp Val Asn Asn Leu Ser Asp Cys Gln Ala Leu				
1325		1330		1335
Gly Lys Gln Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn				
1340		1345		1350
Val Gly Ala Gly Tyr Leu Ala Leu Leu Gln Val Ala Thr Phe Lys				
1355		1360		1365
Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asp Val				
1370		1375		1380
Lys Leu Gln Pro Val Tyr Glu Glu Asn Leu Tyr Met Tyr Leu Tyr				
1385		1390		1395
Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu				
1400		1405		1410
Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys				
1415		1420		1425
Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln Lys Lys Tyr				
1430		1435		1440
Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln Lys Pro				
1445		1450		1455
Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp Phe				
1460		1465		1470
Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys				
1475		1480		1485

Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys
1490 1495 1500

Tyr Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val
1505 1510 1515

Leu Phe Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His
1520 1525 1530

Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val
1535 1540 1545

Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys
1550 1555 1560

Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg
1565 1570 1575

Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg
1580 1585 1590

Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn
1595 1600 1605

Ile Gly Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe
1610 1615 1620

Gly Met Ser Asn Phe Ala Tyr Val Lys Lys Glu Ala Gly Ile Asp
1625 1630 1635

Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu
1640 1645 1650

Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro
1655 1660 1665

Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp Thr Ile His
1670 1675 1680

Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser Val Gly
1685 1690 1695

Ile Phe Phe Phe Val Ser Tyr	Ile Ile Ile Ser Phe	Leu Val Val
1700	1705	1710
Val Asn Ser Tyr Ile Ala Val	Ile Leu Glu Asn Phe	Ser Val Ala
1715	1720	1725
Thr Glu Glu Ser Ala Glu Pro	Leu Ser Glu Asp Asp	Phe Glu Met
1730	1735	1740
Phe Tyr Glu Val Trp Glu Lys	Phe Asp Pro Asp Ala	Thr Gln Phe
1745	1750	1755
Ile Glu Phe Ser Lys Leu Ser	Asp Phe Ala Ala Ala	Leu Asp Pro
1760	1765	1770
Pro Leu Leu Ile Ala Lys Pro	Asn Lys Val Gln Leu	Ile Ala Met
1775	1780	1785
Asp Leu Pro Met Val Ser Gly	Asp Arg Ile His Cys	Leu Asp Ile
1790	1795	1800
Leu Phe Ala Phe Thr Lys Arg	Val Leu Gly Glu Ser	Gly Glu Met
1805	1810	1815
Asp Ala Leu Arg Ile Gln Met	Glu Asp Arg Phe Met	Ala Ser Asn
1820	1825	1830
Pro Ser Lys Val Ser Tyr Glu	Pro Ile Thr Thr Thr	Leu Lys Arg
1835	1840	1845
Lys Gln Glu Glu Val Ser Ala	Ala Ile Ile Gln Arg	Asn Phe Arg
1850	1855	1860
Cys Tyr Leu Leu Lys Gln Arg	Leu Lys Asn Ile Ser	Ser Asn Tyr
1865	1870	1875
Asn Lys Glu Ala Ile Lys Gly	Arg Ile Asp Leu Pro	Ile Lys Gln
1880	1885	1890
Asp Met Ile Ile Asp Lys Leu	Asn Gly Asn Ser Thr	Pro Glu Lys
1895	1900	1905

Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser Tyr Asp Ser
 1910 1915 1920

Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp Lys Pro Glu
 1925 1930 1935

Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln Lys
 1940 1945 1950

<210> 69
 <211> 1380
 <212> DNA
 <213> Homo sapiens

<400> 69
 aatgtatttta ttttaattgat gataaaactgt aataaaatca tagttgtttg ctctaaagta 60
 gatatgaaag gtcagatgaa acaataacat acatctggat tgagaaatat cttaataact 120
 gatggattat ttttattttc tttatgtatt gtgtgcttca atatcctaataa aaataatatt 180
 agctagggttc actgatgtat agaatctttt tctacattta gatatttctt gcaaagtgtt 240
 taccagaaag caacacaaaa atactatcag tgagtatgtg tttacactgt tctctaagga 300
 gtcaaattcc tcaccttgaa aataattcat cccaggaaga gaaaagggtt tcaaaagact 360
 agagcaggcc acaaggaggc tttcgcaaaa ctctacacgt aaagggtaat gtaaaactta 420
 aacctatttt tcaaacagta atttatatat cttttaattt tagtagttta tgtgtgaaac 480
 aatcatgcaa aacaacaaag tgataaaatt ttttaaaaaa attagtgaga tgcaaataac 540
 tgaatatgta aaagggtctca tacatattta tatgtagtag ataagttaca tttttttagt 600
 gtgttgggaa attttagctc acatcacctc tctactgtca tcttggggca ctttcatgac 660
 taccatgct tcattgcaggc ttactttcct ccctgtgaca gaggataatg ggaatgtttt 720
 ttctttggct caattttgtg tgtgtccgcc agtagatggc gtaccacttt gagtgcgac 780
 ggcctttttt tctttctttt tttttttcct caaagctgtt ttctgatata tgttgggtac 840
 catagagtga atctcagaac aggaagcgga ggcataagca gagaggattc tggaaaggct 900
 tctttgtttt cttatccaca gagaaagaaa gaaaaaaaat tgtaactaat ttgtaaacct 960
 ctgtgggtcaa aaaaaaaaaa aaaaaaaaaa gctgaacagc tgcagaggaa gacacgttat 1020
 accctaacca tcttggatgc tgggctttgt tatgctgtaa ttcataaggc tctgttttat 1080
 caggtaagct gacaaaacat ttcattatct gcaccataga acctagctac caggtcattt 1140
 tccttacttt aaaatcatct tcattgctgt atttttaacc cagtgttgtt taaatgtaaa 1200

ttacaggaac	caaaggcatc	gtttgatgtg	taaactgctt	actatctctt	tatctttcaa	1260
agaaaataga	gcctgtctgg	aaatggtgat	ttatggtaca	tactaggcat	caatggtctt	1320
gtgtttttgt	agatgcttat	gattaattgt	attcagaaaa	aatatctttt	attatactta	1380

<210> 70
 <211> 840
 <212> DNA
 <213> Homo sapiens

<400> 70	
agggaagaac	agaaggatgc tcaggagtgc cagcatgcct tcagaaagac taaatggatc 60
aaggctgcca	aagaaggggg agcacccttg tcccaacctt aggatcctgg cagtgggtcc 120
tggtcccatt	cttcctaaat catgctaggg catgctttta acaagggcca aatatcttgc 180
tttgcacatc	ccttgctttc tcgatccagg gccataaaaa aaaaaggaat aaaaccacga 240
cacagagcca	gagcaccctt atgccaagtgc tcaaagatta taggctaatt tcacctgtat 300
tctctttcta	cagagattat ggagcaagaa aactgaagcc aagccacatc aaggtttgac 360
agggatgaga	tacctgtcaa ggattcatag tagagtggct tactgggaaa ggagcaaaga 420
atctcttcta	gggatattgt aagaataaat gagataattc acagaaggga cctggagctt 480
ttccggaaaa	aggtgctgtg actatctaag gtaactaaac aacttctggg tataagtttg 540
tttttgtgga	aaataaacta aaatctctac tatttaacaa ggacagctgt atcaggacca 600
aaagaaggca	gaggggtggt ttcttccttc ctctaccagt ttgttcttcc aaagaggcaa 660
atacatagag	ggagacatag cacagatgac cttagggaat ggaatgatgc caaaggctgt 720
tgatgtaaga	aagagagatt aactcagttt ttttttgtt tttgtttttt tgttgtgtgt 780
gttgttgttt	tgagacagag tctctctctg tcgcccaggc tggagtgcag tggcatgaac 840

<210> 71
 <211> 780
 <212> DNA
 <213> Homo sapiens

<400> 71	
gatatattaa	atcttatgta ttttaataaa ttataatgtg catataatca ttaataatat 60
atatattcca	caccaaggca tcagtaagaa ttaattttta aagtctgctc taatgtgaat 120
ataaaattat	gtaagaactc tgtataataa gctcacagag tacaagaaag gagaggaaaa 180
aagtaaaaga	gaactgcgaa agaactatga gggatttcca aacagcaaaa ttgtcattga 240

agccatgaga aactctactc actaaattct ttaatttctc agcctacca aatattgggc	300
aaaccctaatt tctcttgag gggaaaagct gagagtctgg aactagccta tcttccgagg	360
acttagagac aacagtatgg gaatttcaac gagacgtttt tactttcttt tgaccaagat	420
tcaaattctt tattccagcc cttgataagt aaataagaag gtaaaggact atttatttgt	480
aaaaagtttt tcatgatatt gtgatggcac cttgttccat atcatctcag ataaatcaga	540
ataatttgtg aaaattactc ggtgatattcc acattagata ttttaaacct aatgttattt	600
ctaaaacaaa aaccaaccag gagaatccaa ttaagtaaaa tgtatgtatt aatataaatt	660
agctattccc atctggaaaa gggcagccat ttctgtgttg aggtgcctca atgatactga	720
ggctgagaca ggtagatga tacaggcata ccattagcag cagactcaat actaaccag	780

<210> 72
 <211> 1025
 <212> DNA
 <213> Homo sapiens

<400> 72	
acaaagtatt gaaaaggcgg ggggcaggat gcagaataat taagcaattt tattgacaaa	60
ctthactggc attactcttt tgctgaaagt atactatatt ttggcttaca gtgtcaaac	120
agaatttttt aaatgctttt aaaaaatgga caaaattata gatattcttg agtttaaata	180
taatgtttat atattatata tactgtacat tgtagaatgg ctaaatcaaa ctaattaaca	240
ttaagtacag acttttgata gatttatgaa cttggcttat tgagaatgag gttgaatgat	300
gatgttttca agttcaaatg tgtagtgcag tactaaaagc atgacttaat gtttatagct	360
ttaaaaagtt actaaagaat gacattttgg ttgatgttct tatgccaat cgcttgcttt	420
cctaactctt gtgcaatttt tctttttatt gcaggtaatt cgtatgcaag aagctacacg	480
taattaaatg tgcaggatga aaagatggca caggcactgt tggtaacccc aggacctgaa	540
agcttccgcc tttttactag agaatctctt gctgctatcg aaaaacgtgc tgcagaagag	600
aaagccaaga agcccaaaaa ggaacaagat aatgatgatg agaacaaacc aaagccaaat	660
agtgacttgg aagctggaaa gaaccttcca tttatttatg gagacattcc tccagagatg	720
gtgtcagagc ccctggagga cctggatccc tactatatca ataagaaagt gattattgat	780
tttagacttc taataaatct ttaatgaaac tcttaactgt aatatacttt tctgggcctt	840
atatacagca tcacaatttt tcttctgtta aagattttat aatactcttc actgtcactt	900
atttttatca caatataata aaacaaacat ttataagaaa tgaagtcaag agttgggttac	960

agtcaggaaa tatgaataga tgaatgattt ctacaatttc acagtgataa ttcagatagt 1020
caaaa 1025

<210> 73
<211> 433
<212> DNA
<213> Homo sapiens

<400> 73
tgtaacyata tgttaattta aacatctaac atgtttgtag ttatgatata tcaactgggt 60
taaacaaacc agtttgaaca aacaaattcy attttttaaa aaggctctca tgtatgtaag 120
ctccttaaat aagcccatgt ctaatttagt aattttactc gtattttctg tttcagactt 180
ttatagtaat gaataaagga aaggcaattt cccgattcag tgccacctct gccttgata 240
ttttaactcc actaaaccct gttaggaaaa ttgctabsaa gatthttggta cattcatatc 300
cttttaatgt gaattgccta aatgctattt ctaacagttg attttaaaga aaatgtcagt 360
tatatthttca agtatctgta aaatttcttt gagattaatg gtaacattgt tagtttaatt 420
catttatttg cat 433

<210> 74
<211> 450
<212> DNA
<213> Homo sapiens

<400> 74
gagtgacca aggccatatc acaggctttg aagtttctta ttatthttatc attgtthttaa 60
aacaataat attaatthca cagthttttgc atcgataaac thttthtggt gthttggatc 120
atttataaat ggccatggta acctactaac atttattcct taactataat ctactthatt 180
cagcatgctt atcatgtgca ctatthtgac caactgtgta thtatgacct tgagcaacct 240
tcctgactgg acaaagaatg tagagtaagt aggaataact tctgggaatg agaaatgcac 300
actcaaattc tctagcaatc tccttgthgg tatagcctga cttatggtht ccactthctgt 360
ctaagaaaag thattthcat aatatgcagc cgghaaagga ggtctthtcg gggagctatt 420
cttctacgag gtaagtattt tcccacaaaa 450

<210> 75
<211> 701
<212> DNA
<213> Homo sapiens

<400> 75

aaaatttacc atttgyggct ttccattaca tttctatcag ataactctgc gctagtaggt	60
caaactagat gattatccat aagatacatg aaactattat tctaaaaccc aaatagttaa	120
accagattag attcctaaag aatataatctt ctcttcagtt taactctttg ctcaggcttg	180
taaaactaac taaatgaata gattatcttg taaatagaag taaggaacaa tattttaatg	240
aattgaaaaa ccacaaaagg ataggatttg ctatgattga aaacatttat tttaacagtt	300
caagcaaaat tgtaattttt ggcttggatg tttttcctag gtacacattc actggaatct	360
atacctttga gtcacttata aaaatcttgg caagagggtt ttgcttagaa gattttacgt	420
ttcttcgtga tccatggaac tggctggatt tcagtgtcat tgtgatggcg tgagtaactt	480
tgaaaatttg ataagcgcaa aggagtgaag atagtcatac tacaaacaag gtctttgtgt	540
catatattaa atgtagagct ttcttggttag tcaagttaac tatatgggtt gtgtattttc	600
agaatacata ttagaatata tattgcaatg taaatatatc cagtaaatga tcaataaatg	660
gggttatctt catgtcatat agtctttctc ttcacaaaa t	701

<210> 76
 <211> 286
 <212> DNA
 <213> Homo sapiens

<400> 76	
atttggttaa ctcacagggc tctatgtgcc aaaccagca ttaagtcctt atttagtata	60
aactttgcc aactatcag taactctgat ttaattctgc aggtatgtaa cagaatttgt	120
aagcctaggc aatgtttcag cccttcgaac tttcagagtc ttgagagctc tgaaaactat	180
ttctgtaatc ccaggtaaga agaaactggg gtaaggtagt agggccctta tatctccaac	240
ttttcttggtg tggtattgtg tttgtgtgtg aactccccta ttacag	286

<210> 77
 <211> 515
 <212> DNA
 <213> Homo sapiens

<400> 77	
gtaagaagaa actggtgtaa ggtagtaggc cccttatatc tccaactttt cttgtgtgtt	60
attgtgtttg tgtgtgaact ccctattac agatattgtg cagagtttgt ggacctgggc	120
aatgtctcag cgttgagaac attcagagtt ctccgagcac tgaaaacaat ttcagtcatt	180
ccagggtgaga gctagggttaa acaccgaggt tgactttaat tattgagttt gaaatcaatt	240
tatatgactt acagcattag ccttggtgtc tattattaca gttcatcccg gtaaataatg	300

ccaaatgatg tttcaatgtc agtttagctc ctaaaatfff ataaattaca tgcgtattta	360
taaagtcagc ctttgagttt aacagaaaat tgcattgagac atcttcaaaa aatgctaatt	420
tgggcctctt gcgctctctc tctctctttt tcactaccat ggctttacta acagatttgg	480
atftttaccat tcgctgcaga tgtagttcaa aaatg	515

<210> 78
 <211> 564
 <212> DNA
 <213> Homo sapiens

<400> 78	
aaacttcctg actagatatt taaaccttca tattgaatft ccagcaagca cactgttcat	60
gtgtaaaaatc tgctgttcat ctattttcca aatcatcagg ctatccatac agctttggtg	120
tctaaatagt caagcaatca tttatggggg aaagagaatg tgtgtgacta ttaagaaatc	180
atgattttctg gcactcttcc tcaggtaacc tatagttctc tctctgcagg tttaaagacc	240
attgtggggg ccctgatcca gtcggtaaag aagctttctg atgtgatgat cctgactgtg	300
ttctgtctga gcgtgtttgc tctcattggg ctgcagctgt tcatgggcaa tctgaggaat	360
aaatgtttgc agtggccccc aagcgattct gcttttgaaa ccaacaccac ttcctacttt	420
aatggcacia tggattcaaa tgggacattt gttaatgtaa caatgagcac atttaactgg	480
aaggataaca ttggagatga cagtaagaag tattacatta tgtaaacctt agtgttgctg	540
aatgaatftt caactataaa tagt	564

<210> 79
 <211> 497
 <212> DNA
 <213> Homo sapiens

<400> 79	
tgagactgtg ggtgtacagc cacctttgta aataactgaa atagtccaac tctgatttat	60
tactaatact aatgtgaata ggattaatat gaaataaaat gggttttttt ttgtattaac	120
aggtcacttt tatgttttgg atgggcaaaa agacccttta ctctgtggaa atggttcaga	180
tgcagggtaa gaaacataat atatattttt aagatataga actctttgcg aaaaaaaaaa	240
gtaggtagga aaacaactac atgggttatat gtgtagcctt accatgtatg caataaagag	300
cagtgtgct ccctaggaa gtgccttgte tgccttaccg gattgccact ggtcctaaac	360
tcacagcaat taaaaattat ccctttgtga agacctttcc ccaaaatttc acagttaaga	420

tgttcttaaa ttgatgctcc aatgtgtgaa ggcccagagt ctgtctttgc tgtacatcta	480
tcagagctgt taggaaa	497

<210> 80
 <211> 501
 <212> DNA
 <213> Homo sapiens

<400> 80	
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tctaaatgtc trwaaawatt tatttgcatc taaatcttct atcggctcttc ctagtgaatt	120
tcatctgata agtttcacgg tgggcaatca cctaaagtgt tctggaaatt aaagcaagat	180
aattcgtcac agatagcagc tttgggtttt gaaaattcct ataagtcaaa taaattgaaa	240
ttgctgtaat ttctaaactg accctacctc catttctctc tcttatagcc agtgtccaga	300
aggatacatc tgtgtgaagg ctggtcgaaa ccccaactat ggctacacaa gctttgacac	360
ctttagctgg gctttcctgt ctctatttcg actcatgact caagactact gggaaaatct	420
ttaccagttg gtaagggtcca aatgagcatg cataacattt atttttatag acatgtatga	480
aatgaaaagc ataggctgag t	501

<210> 81
 <211> 432
 <212> DNA
 <213> Homo sapiens

<400> 81	
agctaattag tctactgact atctaactgt ggtaatcaga tatttatttg gggacattat	60
actaaaatac tgatggaatt atccccatt tcccctagac attacgtgct gctgggaaaa	120
catacatgat attttttgtc ctgggtcattt tcttgggctc attttatttg gtgaatttga	180
tcttggtgtg ggtggccatg gcctatgagg ggccagaaatca ggccaccttg gaagaagcag	240
aacaaaaaga ggccgaattt cagcagatgc tcgaacagct taaaaagcaa caggaagaag	300
ctcaggtact gagtgataaa mgcaaagatt tatcattatt attmttagtt tctaagtaga	360
aatagtgtta tactatagag ggtagattgg aactgctttt tcattttata tatmggcatt	420
gtcattagac ac	432

<210> 82
 <211> 489
 <212> DNA
 <213> Homo sapiens

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<400> 82
tgcaaactgt tttcaaagct ctgtgttcta aatagtgcct ggctttgttt tatgacaggc      60
agttgcggca gcatcagctg cttcaagaga tttcagtgga ataggtgggt taggagagct      120
gttggaagt tcttcagaag catcaaagtt gagttccaaa agtgctaaag aatggaggaa      180
ccgaaggaag aaaagaagac agagagagca ccttgaagga aacaacaaag gagagagaga      240
cagctttccc aaatccgaat ctgaagacag cgtcaaaaga agcagcttcc ttttctccat      300
ggatggaaac agactgacca gtgacaaaaa attctgctcc cctcatcagg tatgattttc      360
tactaagtgc tctggtttct ttgtcattgc tattgctttt tagtttttgt attttgtttt      420
ggtacacttt tgtactatct gtacttcagt tgagggacag ggaactaaca tttaatatag      480
ttgtttaaa                                     489

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<210> 83
<211> 653
<212> DNA
<213> Homo sapiens

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<400> 83
gtgaagacta aatgaagtgg ttgtatactt agtaaattgc aaatcagtat tgttagtcag      60
aaaaacactc tttgtactta aatttgcttt aataaaaata tcaaaatata tgtgtcctct      120
ataaatttga ttatccatgt ttaagggcaa gagtatacta actccaaaga aaacagatcc      180
tttaatatata atatttatta aataattgcg ttcttccctt acccccatcc cattcctttc      240
ctttttgctt tctctgcagt ctctcttgag tatccgtggc tccctgtttt cccaagacg      300
caatagcaaa acaagcattt tcagtttcag aggtcgggca aaggatgttg gatctgaaaa      360
tgactttgct gatgatgaac acagcacatt tgaagacagc gaaagcagga gagactcact      420
gtttgtgccg cacagacatg gagagcgacg caacagtaac gttagtcagg ccagtatgtc      480
atccaggatg gtgccagggc ttccagcaaa tggggaagat gcacagcact gtggattgca      540
atggtgtggg ttccttggtg ggtggacctt cagctctaac gtcacctact gggcaacttc      600
cccagagggtg ataatagatg acctagctgc tactgacatt attcaccaat ttg          653

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<210> 84
<211> 566
<212> DNA
<213> Homo sapiens

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<220>
<221> misc_feature

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<222> (477)..(477)
 <223> n = a, c, t or g

<400> 84
 gaattctctt aaaggtacta cctgtgatac tttttttaa aaaaaactgt ttataactta 60
 gcaataattc aatattttat tcttgaaatt cttacctgga aaattgcatg tagcatgatt 120
 tgcaaagaaa tgctatgtgg tgttgattta cttattggga agagtgggtt gagccatcag 180
 tatttggttt gcagggcacc accactgaaa cggaagtcag aaagagaagg ttaagctctt 240
 accagatttc aatggagatg ctggaggatt cctctggaag gcaaagagcc gtgagcatag 300
 ccagcattct gaccaacaca atggaaggta agagcaggtc atggaacagc caactttctg 360
 tgattatgtg ctttgtgaac tattccttct tttcatagaa ttactgaagt ctgttaccga 420
 gatcgaacta tatattagac ctaagaatgt gatatatggt gtacattatc acattgnnta 480
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 atttcaacac ttgatattat atcaat 566

<210> 85
 <211> 748
 <212> DNA
 <213> Homo sapiens

<400> 85
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 cttctcaagt ttcttaagta atatgaactt ctattttcaa atataagcat caattttggt 180
 aaataatgta aaatctacta gcaataataa ctcatTTTTg ttgttattta ctactcttcc 240
 ttgttattgt cctccagaa cttgaagaat ctagacagaa atgtccgcca tgctggtata 300
 gatttgccaa tgtgttcttg atctgggact gctgtgatgc atgggttaaaa gtaaaacatc 360
 ttgtgaattt aattgttatg gatccatttg ttgatcttgc catcactatt tgcattgtct 420
 taaataccct ctttatggcc atggagcact accccatgac tgagcaattc agtagtgtgt 480
 tgactgtagg aaacctggta agtacatttg aagtttactt atttactttg gtagatgtgg 540
 gagagataga ccaaagggaa agatgtattt gtgctgtgtt gaacccaaaa attatatcct 600
 ctttctcat agaaagaaat atctaaggaa tattacaggg aatctcagag atacagccta 660
 aaactcaact ggtatgaatg ctgattgttt aggccaatgt ctgtgctgat tgatcatggg 720
 gtcttaccag ttgtaaacgt ctcaaaat 748

<210> 86
<211> 664
<212> DNA
<213> Homo sapiens

<400> 86
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agtgcctgac tctaattttt taggtcttta ctgggatttt tacagcagaa atggttctca 180
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tgcgatcatt cagactggta tctattttata tatatccctg tcgctcattg gcacaacatt 360
tattttgaaa ttgaatcaat gtatatattat ataattatta attttaattt taaatttaca 420
tcaatatgtg acattctaag aaaacatgta aacatccyct ttaaagctaa accattttct 480
aagaatgatg aaagcattca aaatactcta taatgattag gtatgtaggg cacattagaa 540
aacctacaag tacttttctaa aactgtgttt taagtttatg aagctttttt ggccttacag 600
tctgtaaaga tacgcaaata aaaattttaga cccaggttaa ttttagcttt ttattaacct 660
tact 664

<210> 87
<211> 750
<212> DNA
<213> Homo sapiens

<400> 87
tatttttatt tttgcactta aatgatatta tgaccagatt tacaattcta atattgttaa 60
cactattttt tctggatttg aaattgaatc agttcagtat attttgagtt ttacatcta 120
ccacgtgtgg ttctatgata ccacatacta ataaaataat gtctaaaatt atattatgat 180
tactactaac agcatctttt cacttgatta cagcttagag ttttcaagtt ggcaaaatcc 240
tggeccacac taaatatgct aattaagatc attggcaatt ctgtgggggc tctaggaaac 300
ctcaccttgg tggtggccat catcgtcttc atttttgctg tggtcggcat gcagctcttt 360
ggtaagagct acaaagaatg tgtctgcaag atcaatgatg actgtacgct cccacggtgg 420
cacatgaacg acttcttcca ctcttctctg attgtgttcc gcgtgctgtg tggagagtgg 480
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atgttgggtca tggtcattgg aaaccttgtg gtatgtatgt agtacaaatg ctcataaatt	600
agaacaagag cagacagtag ctaggaacgt ggccagatgt agtaaacata tctctggttt	660
atagtaagtg gcctagactg aaatccccct attagcactc agagaataag caagttattt	720
aacttctcct gggctctggt ttcccatttt	750

<210> 88
 <211> 768
 <212> DNA
 <213> Homo sapiens

<400> 88	
ccttagagca ggatattagg tccttttaaag agtgtgtgac ttagacatgg catctgaaat	60
atagtaagca ttcaataaac atttgttgaa ataatttttag caaagatcta tgagttccct	120
tttttaggctg ttatttaaatt gcataatttca atattaarat aggcattttt ctttttttct	180
tttaggttct gaacctcttt ctggccttat tggtgagttc atttagctca gacaaccttg	240
ctgctactga tgatgacaat gaaatgaata atctgcagat tgcagtagga agaatgcaaa	300
aggggaattga ttatgtgaaa aataagatgc gggagtggtt ccaaaaagcc ttttttagaa	360
agccaaaagt tatagaaatc catgaaggca ataagataga cagctgcatg tccaataata	420
ctggaattga aataagcaaa gagcttaatt atcttagaga tgggaatgga accaccagtg	480
gtgtaggtac tggaagcagt gttgaaaaat acgtaatcga tgaaaatgat tatatgtcat	540
tcataaaciaa cccagcctc accgtcacag tgccaattgc tgttgagag tctgactttg	600
aaaacttaaa tactgaagag ttcagcagt agtcagaact agaagaaagc aaggaggtaa	660
ggaatgcttt taaatttttt gttccatttc ctatgataac catgtactac agttatttac	720
tattttcatt gtgcttatat gcattatcga aaagcaatga ttgtaagt	768

<210> 89
 <211> 471
 <212> DNA
 <213> Homo sapiens

<400> 89	
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ttttcacaca atgacacagt atttcccagt tagttaaata aaagggggaa aatcacatct	120
ttgaaatggg attttgtttc cagaaattaa atgcaaccag ctcatctgaa ggaagcacag	180
ttgatgttgt tctacccgga gaaggtgaac aagctgaaac tgaacccgaa gaagacctta	240
aaccggaagc ttgttttact gaaggtaaac aagctctgat gtgattaaat acaatctccc	300

cttgttcttt acggagactg aatatgcctc atttaaaaaa aaaaatttag caaacgaggt	360
gtggtggctt atgcctgtaa ccccaaaatt ttgggaggct acggtaggag gattgcttga	420
ccccaggagt ttgagaccac cctgggaaat gtagtaaggc tttgcctcta c	471

<210> 90
 <211> 623
 <212> DNA
 <213> Homo sapiens

<400> 90	
gaattctaag tagctggctg agtatataag tctgagaata attcattata caggagggat	60
gctgacgata actaggaaat gaaggagatg gttaccctat gaaatgatta cctggaagtg	120
gagtggggaa ggggcaagaa agtttatttt ttctatttta agattaaaat atatttttta	180
attaactata tttsattttt aggatgtatt aaaaagtttc cattctgtca agtaagtaca	240
gaagaaggca aagggaagat ctggtggaat cttcgaaaaa cctgctacag tattgttgag	300
cacaactggg ttgagacttt cattgtgttc atgatccttc tcagtagtgg tgcattggta	360
agtgaaatgc atattggcaa gaatcagatt ctggtgaaat agtttattct ccaaaattac	420
cagatgcaaa cactgagctt cagaatcaaa agaaaaggca tatctgtgtc ttgcagagct	480
tggcacccaa ggtttaacga tgcaaaattc agttctgaac aaatcagcac catgaaacag	540
ccagatggaa tttctcatct ggtgtttatc taacagatgt tttcctcact gagacaacca	600
tttgagaga cattctgtaa cca	623

<210> 91
 <211> 520
 <212> DNA
 <213> Homo sapiens

<400> 91	
ctagttagtc tttagatttg tctcatgttc aatgtttatg taaaatatca ataataaaaa	60
ttattctttt gtactcacta ttatactaag caattttttc aaatatttag aagaagcaag	120
ccatttaagt aaaataaaat atttttgatt cataggcctt tgaagatata tacattgaac	180
agcgaaagac tatcaaaacc atgctagaat atgctgacaa agtctttacc tatatattca	240
ttctggaaat gcttctcaaa tgggttgctt atggatttca aacatatttc actaatgcct	300
ggtgctggct agatttcttg atcggtgatg taagtatttt aagtgatttt tataaaattg	360
tttttaaaag aggcaagttt gacatttcat atgtttctgt tattaaaact ttcactaata	420

atgacataat tatgcagtta tttaaacaaa actgtaacat atgcaacaat gaggaatatc	480
tcatgggaaa gagtagagga ggtcctaaac atgggcagtg	520

<210> 92
 <211> 595
 <212> DNA
 <213> Homo sapiens

<400> 92	
ctaactaata atttaagcac acatccatga aggatctggc attgaactca atcctgaatt	60
atcagtggta tatgcacaag ttgaaaaggg gtccatggta taaaatatct aactggagat	120
attgacacgt gttgataaat atgggcaagt attctggttt cattgggttaa aaaaagcaa	180
tagtatgaga tgagactggc aatataagat gacccacta tgtggaagat gaaagttgcc	240
aaggtagtgc caaattagta tttagtctgc attaaataga taccacacc tataccttca	300
gtcaacagtt tatttcttgg tgaactaatt aatTTTTTTT tccttttgta ggtttcttg	360
gttagcctgg tagccaatgc tcttggtac tcagaactcg gtgcatcaa atcattacgg	420
acattaagag ctttaagacc tctaagagcc ttatcccggt ttgaaggcat gagggtaaga	480
agaatagaca ctctaattat tcatgtcaaa aattacatgt aggtaatgat ttagatagaa	540
aagggtgcc tactcttctg atatttattt caatagaaat tacagaatta gaagc	595

<210> 93
 <211> 787
 <212> DNA
 <213> Homo sapiens

<400> 93	
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catactgtag catattttgc tttccttaaa accttagctc tttagttgtg tcattgtttg	120
ttttccttca aatatgtgct agaaaaatta gaagaaacaa cttgtccacc tagatTTTTa	180
tttaactctt ttcaagcaca tattaatact aaacaaatac attgaaggaa tggtttccat	240
tcaaaagggt tgtaagctat gttccctcg ctgtctcttc taggtgggtg tgaatgctct	300
tgttgagca attcctcta tcatgaatgt gctgttggtc tgtctcatct tctggttgat	360
cttttagcatc atgggtgtga atttgtttgc tggcaagttc taccactgtg ttaacatgac	420
aacgggtaac atgtttgaca ttagtgatgt taacaatttg agtgactgtc aggctcttgg	480
caagcaagct cgggtgaaaa acgtgaaagt aaactttgat aatgttggcg ctggctatct	540
tgcactgctt caagtggtaa gtggctactg tacgagtttt gaaaaagttt tcaagatggt	600

tcaaggaaga ttatttcctt gatgttcttc gtttgaatga ctaacatttg acagcatgaa	660
aaaaagttaa tgataacacc tataatatca gcttgaattg atcataaaaa agatgttaca	720
attatttttat aatgtatttt ccttagtggt aagcttttag tatgttttaa tgtgatttta	780
tattttct	787

<210> 94
 <211> 438
 <212> DNA
 <213> Homo sapiens

<400> 94	
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ctcttgatat gaaatttcac aatattgtac aaaaagttat ttgttataat actgtcagat	120
tttcatctgg ttaaattgtca ttgttaggtg aaatttttat gaacaattca aatatatggt	180
atttacaggc cacatttaaa ggctggatgg atattatgta tgcagctggt gattcacgag	240
atgtaagtat cactcaaata ttatttatag gttctagatt tcttatgggtg aatattgggtg	300
gtaatttaaa cactgatata tccaaaattc tatattagaa catttaatat tgcatataaa	360
aaatgaacag tctgcttcaa tatagatgat gcttgattaa tgtgtgccta atatacaata	420
tgtagcta atgaaacg	438

<210> 95
 <211> 637
 <212> DNA
 <213> Homo sapiens

<400> 95	
gtaaggcaca atgggaaaag agaatcaaga acaatcataa aacttgcaaa ccttcatttt	60
actagatcat actagtttta aaaaattggt tttgtagaac aatatctcag ggtaaggcaa	120
aagtagcact gtattaagta acagcactca ataaattact gatttagtgt aagtatttat	180
agtatttttc atattattta atattttcaa tatcatttag gttaaacttc agcctgtata	240
tgaagaaaat ctgtacatgt atttatactt tgtcatcttt atcatctttg ggtcattctt	300
cactctgaat ctattcattg gtgtcatcat agataacttc aaccagcaga aaaagaagat	360
aagtattctt tagcttttac ctttcttcat tctggggttc tgtctgttaa tacagccaaa	420
taaccagaat acctgtggtc atgacagact taaatcatgt ttatattatt ttcagttgcc	480
catgtgggta tttaagctgc agggattcca gcctctagtc agtggctcct ctcaaagttt	540

atctattgga tagctttctg acccaaaaat gtgtccactc cttcggaccc atccaacggg	600
tctccagtgc tttagcttgg cttacagagc ctttcag	637

<210> 96
 <211> 637
 <212> DNA
 <213> Homo sapiens

<400> 96	
acccttgtgc ctacttttaa acatagtata atcaaattag gatcctgtag cgatcagagt	60
tttatgtacg taaggatttt gcataatatt aagatattca gaatttcaca taaatgggaa	120
aagcaggata aatgtatatg taggaggata atatccactt aaaaattaga aaagattaaa	180
ggaaagacaa atatTTTTTg tgaaagtact attggaacac agaattgtaa ccagttttat	240
actatgtctt tactttggag gtcaagacat ctttatgaca gaggaacaga aaaaatatta	300
caatgcaatg aagaaacttg gatccaagaa acctcagaaa ccatacctc gcccagcagt	360
aagaattact tgtctccttt aatgttccaa agccatgcgt ccatatggtc aaattgagca	420
atgctctgga gcagaacata ttaggtgata tcaccaatat tgagccctaa ttataaagtt	480
catatTTTgc atcataattc acaacttctg cactcattag gagttaccac attccaaaaa	540
aaggaggtaa tgttctttat aatttgtgag ttgaaaactt ctagctcagg gttcctaata	600
aatacttcca aagcaagggt cactttcctg ctaccaa	637

<210> 97
 <211> 759
 <212> DNA
 <213> Homo sapiens

<400> 97	
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gaagagaaaa aaagcacaca aaattgtttg gggtaatatg aggaggggtgc acatccatcc	120
cgtatgtgga agggctttat ctacaatttt actgcattat tctttatgaa atatatatag	180
taaccttatt tctcttctct cactttctag aacaaattcc aaggaatggt ctttgatttt	240
gtaaccagac aagtctttga tatcagcatc atgatcctca tctgectcaa catggtcacc	300
atgatgggtg aaacggatga ccaggggcaaa tacatgaccc tagttttgtc ccggatcaac	360
ctagtgttca ttgttctggt cactggagaa tttgtgctga agctcgtctc cctcagacac	420
tactacttca ctataggctg gaacatcttt gactttgtgg tggtgattct ctccattgta	480
ggtaagaaca gcttaattac caagagggtat agttacagag aaacagttgc cccaggacct	540

tctagctgat taacatggaa attaggtctg agaataataa tgcatataga tgtaaagttc	600
aacactagca tatttgaata aaaactctga aacctgggtt tattcacaaa gctaactagt	660
tagaaaccat gttaggaata ccagatttgg gaaagaggtg aagaagacag gaaataaaca	720
ttatcaggta ctctccta cttaaacc aa ggtcacagg	759

<210> 98
 <211> 3975
 <212> DNA
 <213> Homo sapiens

<400> 98	
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caagtttggt gtgttcatag accttaaaaa agataaagcc atcatgtaaa gtgaaaagat	120
attatctgtt tagctgtgtt ctatgttttc cataggtatg tttctggctg agatgataga	180
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cctacgtctg atcaaaggag caaaggggat ccgcacgctg ctctttgctt tgatgatgtc	300
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gaactccact ccagaaaaaa cagatgggag ttcctctacc acctctctc cttcctatga	1260

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ctatTTTTaa cttccatata tgccatatTT ttacaaaatt tgttctagtg catttccatg	1740
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gagagataaa atTTTTgctc aaaaccagaa aaagaattgt aatggctaca gtttcagtta	1920
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aatgaattca acctgctctg tccattatgt caagcagaat aatttgaagc tatttcaaaa	2580
cacctttact tttgcacttt taattcaaca tgagtatcat atggtatctc tctagatttc	2640
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tgtagtatgtt acgtatgcag actagtctta tttttttaat tcctgctgca ctaaagctat	3120
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aattttacaa cagactagtg catgattcac caagcagtac tacagaacaa aggcaaatga	3540
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ggtttgataa taatagtagt aaccacctac aatagctttc aatttcaatt aactcccttg	3660
gctataagca tctaaactca tcttctttca atataattga tgctatctcc taattacttg	3720
gtggctaata aatgttacat tctttgttac ttaaattgcat tatataaact cctatgtata	3780
cataaggat taatgatata gttattgaga atttatatta actttttttt caagaaccct	3840
tggatttatg tgagggtcaaa accaaaactct tattctcagt ggaaaactcc agttgtaatg	3900
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atataagggtg gctaa	3975

<210> 99
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic oligonucleotide

<400> 99	
tgtgttctgc ccagtgaga ct	22

<210> 100
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<210> 387
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caagatgatg atgag 15

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<400> 403
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<400> 404
ccccttatat ctccaac 17

<210> 405
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<400> 405
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<210> 406
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<400> 406
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<210> 407
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<400> 407
aaatacataa tcgat 15

<210> 408
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<400> 408
aaatacrtaa tcgat

15